Table of Contents

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the year ended December 31, 2022

Commission File Number 1-11758

Morgan Stanley

(Exact name of Registrant as specified in its charter)

Delaware	**1585 Broadway** **New York, NY 10036**	**36-3145972**	**(212) 761-4000**
(State or other jurisdiction of incorporation or organization)	(Address of principal executive offices, including zip code)	(I.R.S. Employer Identification No.)	(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of exchange on which registered
Common Stock, $0.01 par value	MS	New York Stock Exchange
Depositary Shares, each representing 1/1,000th interest in a share of Floating Rate Non-Cumulative Preferred Stock, Series A, $0.01 par value	MS/PA	New York Stock Exchange
Depositary Shares, each representing 1/1,000th interest in a share of Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series E, $0.01 par value	MS/PE	New York Stock Exchange
Depositary Shares, each representing 1/1,000th interest in a share of Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series F, $0.01 par value	MS/PF	New York Stock Exchange
Depositary Shares, each representing 1/1,000th interest in a share of Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series I, $0.01 par value	MS/PI	New York Stock Exchange
Depositary Shares, each representing 1/1,000th interest in a share of Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series K, $0.01 par value	MS/PK	New York Stock Exchange
Depositary Shares, each representing 1/1,000th interest in a share of 4.875% Non-Cumulative Preferred Stock, Series L, $0.01 par value	MS/PL	New York Stock Exchange
Depositary Shares, each representing 1/1,000th interest in a share of 4.250% Non-Cumulative Preferred Stock, Series O, $0.01 par value	MS/PO	New York Stock Exchange
Depositary Shares, each representing 1/1,000th interest in a share of 6.500% Non-Cumulative Preferred Stock, Series P, $0.01 par value	MS/PP	New York Stock Exchange
Global Medium-Term Notes, Series A, Fixed Rate Step-Up Senior Notes Due 2026 of Morgan Stanley Finance LLC (and Registrant's guarantee with respect thereto)	MS/26C	New York Stock Exchange
Global Medium-Term Notes, Series A, Floating Rate Notes Due 2029 of Morgan Stanley Finance LLC (and Registrant's guarantee with respect thereto)	MS/29	New York Stock Exchange

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☒	Accelerated filer ☐	Non-accelerated filer ☐	Smaller reporting company ☐	Emerging growth company ☐

If an emerging growth company, indicate by check mark if the Registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the Registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the Registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the Registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of June 30, 2022, the aggregate market value of the common stock of the Registrant held by non-affiliates of the Registrant was approximately 125,979,662,346. This calculation does not reflect a determination that persons are affiliates for any other purposes.

As of January 31, 2023, there were 1,681,940,155 shares of the Registrant's common stock, $0.01 par value, outstanding.

Documents Incorporated by Reference: Portions of the Registrant's definitive proxy statement for its 2023 annual meeting of shareholders are incorporated by reference in Part III of this Form 10-K.

Morgan Stanley

ANNUAL REPORT ON FORM 10-K

For the year ended December 31, 2022

Table of Contents	Part	Item	Page
Business	I	1	1
Overview			1
Business Segments			1
Competition			1
Supervision and Regulation			2
Human Capital			6
Information about our Executive Officers			8
Risk Factors		1A	9
Management's Discussion and Analysis of Financial Condition and Results of Operations	II	7	21
Introduction			21
Executive Summary			22
Business Segments			27
Institutional Securities			30
Wealth Management			32
Investment Management			35
Supplemental Financial Information			37
Other Matters			37
Accounting Development Updates			38
Critical Accounting Estimates			38
Liquidity and Capital Resources			41
Balance Sheet			41
Regulatory Requirements			46
Quantitative and Qualitative Disclosures about Risk		7A	53
Risk Management			53
Market Risk			56
Credit Risk			60
Country and Other Risks			67
Financial Statements and Supplementary Data		8	71
Report of Independent Registered Public Accounting Firm (PCAOB ID No. 34)			71
Consolidated Income Statement			73
Consolidated Comprehensive Income Statement			73
Consolidated Balance Sheet			74
Consolidated Statement of Changes in Total Equity			75
Consolidated Cash Flow Statement			76
Notes to Consolidated Financial Statements			77
1. Introduction and Basis of Presentation			77
2. Significant Accounting Policies			78
3. Acquisitions			88
4. Cash and Cash Equivalents			89
5. Fair Values			89
6. Fair Value Option			100
7. Derivative Instruments and Hedging Activities			101
8. Investment Securities			105
9. Collateralized Transactions			106
10. Loans, Lending Commitments and Related Allowance for Credit Losses			109
11. Goodwill and Intangible Assets			112
12. Other Assets—Equity Method Investments and Leases			112
13. Deposits			113
14. Borrowings and Other Secured Financings			113
15. Commitments, Guarantees and Contingencies			115
16. Variable Interest Entities and Securitization Activities			119
17. Regulatory Requirements			123
18. Total Equity			126
19. Interest Income and Interest Expense			129
20. Deferred Compensation Plans and Carried Interest Compensation			129
21. Employee Benefit Plans			131
22. Income Taxes			134
23. Segment, Geographic and Revenue Information			135
24. Parent Company			137
Financial Data Supplement (Unaudited)			140
Glossary of Common Terms and Acronyms			142
Changes in and Disagreements with Accountants on Accounting and Financial Disclosure		9	143
Controls and Procedures		9A	143
Other Information		9B	145
Disclosure Regarding Foreign Jurisdictions that Prevent Inspections		9C	145
Unresolved Staff Comments	I	1B	145
Properties		2	145
Legal Proceedings		3	145
Mine Safety Disclosures		4	148
Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	II	5	148
Directors, Executive Officers and Corporate Governance	III	10	149
Executive Compensation		11	149
Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters		12	149
Certain Relationships and Related Transactions and Director Independence		13	150
Principal Accountant Fees and Services		14	150
Exhibits and Financial Statement Schedules	IV	15	150
Form 10-K Summary		16	153
Signatures			154

Forward-Looking Statements

We have included in or incorporated by reference into this report, and from time to time may make in our public filings, press releases or other public statements, certain statements, including, without limitation, those under "Management's Discussion and Analysis of Financial Condition and Results of Operations," "Quantitative and Qualitative Disclosures about Risk" and "Legal Proceedings" that may constitute "forward-looking statements" within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. In addition, our management may make forward-looking statements to analysts, investors, representatives of the media and others. These forward-looking statements are not historical facts and represent only our beliefs regarding future events, many of which, by their nature, are inherently uncertain and beyond our control.

The nature of our business makes predicting the future trends of our revenues, expenses, and net income difficult. The risks and uncertainties involved in our businesses could affect the matters referred to in such statements, and it is possible that our actual results may differ, possibly materially, from the anticipated results indicated in these forward-looking statements. Important factors that could cause actual results to differ from those in the forward-looking statements include, without limitation:

- the effect of market conditions, particularly in the global equity, fixed income, currency, credit and commodities markets, including corporate, commercial and residential mortgage lending, real estate and energy markets;
- the level of individual investor participation in the global markets, as well as the level of client assets;
- the flow of investment capital into or from AUM;
- the level and volatility of equity, fixed income and commodity prices, interest rates, inflation and currency values, other market indices or other market factors, such as market liquidity;
- the availability and cost of both credit and capital, as well as the credit ratings assigned to our unsecured short-term and long-term debt;
- technological changes instituted by us, our competitors or counterparties and technological risks, business continuity and related operational risks, including breaches or other disruptions of our or a third party's (or third parties thereof) operations or systems;
- risk associated with cybersecurity threats, including data protection and cybersecurity risk management;
- our ability to effectively manage our capital and liquidity, including under stress tests designed by our banking regulators;
- the impact of current, pending and future legislation or changes thereto, regulation (including capital, leverage, funding, liquidity, consumer protection, and recovery and resolution requirements) and our ability to address such requirements;
- uncertainty concerning fiscal or monetary policies established by central banks and financial regulators, government shutdowns, debt ceilings or funding;
- changes to global trade policies, tariffs, interest rates, replacements of LIBOR and replacement or reform of other interest rate benchmarks;
- legal and regulatory actions, including litigation and enforcement, in the U.S. and worldwide;
- changes in tax laws and regulations globally;
- the effectiveness of our risk management processes and related controls, including climate risk;
- our ability to effectively respond to an economic downturn, or other market disruptions;
- the effect of social, economic, and political conditions and geopolitical events, including as a result of changes in U.S. presidential administrations or Congress, and sovereign risk;
- the actions and initiatives of current and potential competitors, as well as governments, central banks, regulators and self-regulatory organizations;
- our ability to provide innovative products and services and execute our strategic initiatives, and costs related thereto, including with respect to the operational or technological integration related to such innovative and strategic initiatives;
- the performance and results of our acquisitions, divestitures, joint ventures, partnerships, minority stakes or strategic alliances, or other strategic arrangements and related integrations;
- investor, consumer and business sentiment and confidence in the financial markets;
- our reputation and the general perception of the financial services industry;
- our ability to retain, integrate and attract qualified employees;
- climate-related incidents and other environmental and sustainability matters, global pandemics (including impacts of the coronavirus disease ("COVID-19")), acts of war or aggression (including the war between Russia and Ukraine), and terrorist activities or military actions; and
- other risks and uncertainties detailed under "Business—Competition," "Business—Supervision and Regulation," "Risk Factors" and elsewhere throughout this report.

Accordingly, you are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date on which they are made. We undertake no obligation to update publicly or revise any forward-looking statements to reflect the impact of circumstances or events that arise after the dates they are made, whether as a result of new information, future events or otherwise except as required by applicable law. You should, however, consult further disclosures we may make in future filings of our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K and any amendments thereto or in future press releases or other public statements.

Available Information

We file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website, *www.sec.gov*, that contains annual, quarterly and current reports, proxy and information statements, and other information that issuers file electronically with the SEC. Our electronic SEC filings are available to the public at the SEC's website.

Our website is *www.morganstanley.com*. You can access our Investor Relations webpage at *www.morganstanley.com/about-us-ir*. We make available free of charge, on or through our Investor Relations webpage, our proxy statements, annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to those reports filed or furnished pursuant to the Securities Exchange Act of 1934, as amended ("Exchange Act"), as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. We also make available, through our Investor Relations webpage, via a link to the SEC's website, statements of beneficial ownership of our equity securities filed by our directors, officers, 10% or greater shareholders and others under Section 16 of the Exchange Act.

You can access information about our corporate governance at *www.morganstanley.com/about-us-governance*, our sustainability initiatives at *www.morganstanley.com/about-us/sustainability-at-morgan-stanley*, and our commitment to diversity and inclusion at *www.morganstanley.com/about-us/diversity*. Our webpages include:

- Amended and Restated Certificate of Incorporation;
- Amended and Restated Bylaws;
- Charters for our Audit Committee, Compensation, Management Development and Succession Committee, Governance and Sustainability Committee, Operations and Technology Committee, and Risk Committee;
- Corporate Governance Policies;
- Policy Regarding Corporate Political Activities;
- Policy Regarding Shareholder Rights Plan;
- Equity Ownership Commitment;
- Code of Ethics and Business Conduct;
- Code of Conduct;
- Integrity Hotline Information;
- Environmental and Social Policies;
- Sustainability Report;
- Climate Report; and
- Diversity and Inclusion Report.

Our Code of Ethics and Business Conduct applies to all directors, officers and employees, including our Chief Executive Officer, Chief Financial Officer and Deputy Chief Financial Officer. We will post any amendments to the Code of Ethics and Business Conduct and any waivers that are required to be disclosed by the rules of either the SEC or the New York Stock Exchange LLC ("NYSE") on our website. You can request a copy of these documents, excluding exhibits, at no cost, by contacting Investor Relations, 1585 Broadway, New York, NY 10036 (212-761-4000). The information on our website is not incorporated by reference into this report.

Business

Overview

We are a global financial services firm that, through our subsidiaries and affiliates, advises, and originates, trades, manages and distributes capital for governments, institutions and individuals. We were originally incorporated under the laws of the State of Delaware in 1981, and our predecessor companies date back to 1924. We are a financial holding company ("FHC") regulated by the Board of Governors of the Federal Reserve System ("Federal Reserve") under the Bank Holding Company Act of 1956, as amended ("BHC Act"). We conduct our business from our headquarters in and around New York City, our regional offices and branches throughout the U.S. and our principal offices in London, Tokyo, Hong Kong and other world financial centers. Unless the context otherwise requires, the terms "Morgan Stanley," the "Firm," "us," "we" and "our" mean Morgan Stanley (the "Parent Company") together with its consolidated subsidiaries. See the "Glossary of Common Terms and Acronyms" for the definition of certain terms and acronyms used throughout the 2022 Form 10-K.

Financial information concerning us, our business segments and geographic regions for each of the years ended December 31, 2022, December 31, 2021 and December 31, 2020 is included in "Financial Statements and Supplementary Data."

On March 1, 2021, we completed the acquisition of Eaton Vance Corp. ("Eaton Vance"), and on October 2, 2020, we completed the acquisition of E*TRADE Financial Corporation ("E*TRADE"). For further information, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Business Segments—Investment Management," "Management's Discussion and Analysis of Financial Condition and Results of Operations—Business Segments—Wealth Management" and Note 3 to the financial statements.

Business Segments

We are a global financial services firm that maintains significant market positions in each of our business segments: Institutional Securities, Wealth Management and Investment Management. Through our subsidiaries and affiliates, we provide a wide variety of products and services to a large and diversified group of clients and customers, including corporations, governments, financial institutions and individuals. Additional information related to our business segments, respective clients, and products and services provided is included under "Management's Discussion and Analysis of Financial Condition and Results of Operations."

Competition

All aspects of our businesses are highly competitive, and we expect them to remain so. We compete in the U.S. and globally for clients, market share and human talent. Operating within the financial services industry on a global basis presents, among other things, technological, risk management, regulatory, infrastructure and other challenges that require effective resource allocation in order for us to remain competitive. Our competitive position depends on a number of factors, including our reputation, client experience, the quality and consistency of our long-term investment performance, innovation, execution, relative pricing and other factors, including entering into new or expanding current businesses as a result of acquisitions and other strategic initiatives. Our ability to sustain or improve our competitive position also depends substantially on our ability to continue to attract and retain highly qualified employees while managing compensation and other costs. We compete with commercial banks, investment banking firms, brokerage firms, insurance companies, exchanges, electronic trading and clearing platforms, financial data repositories, sponsors of mutual funds, hedge funds, real assets funds and private credit and equity funds, energy companies, financial technology firms and other companies offering financial or ancillary services in the U.S. and globally, including through the internet. In addition, restrictive laws and regulations applicable to certain global financial services institutions, which have been increasing in complexity and volume, may prohibit us from engaging in certain transactions, impose more stringent capital and liquidity requirements, increase costs, and can put us at a competitive disadvantage to competitors in certain businesses not subject to these same requirements. See also "Supervision and Regulation" herein and "Risk Factors."

We compete directly in the U.S. and globally with other securities and financial services firms and broker-dealers and with others on a regional or product basis. Additionally, there is increased competition driven by established firms and asset managers, as well as the emergence of new firms and business models, including innovative uses of technology, competing for the same clients and assets or offering similar products and services to retail and institutional customers. We also compete with companies that provide online trading and banking services, investment advisor services, robo-advice capabilities, access to digital asset capabilities and services, and other financial products and services.

Our ability to access capital at competitive rates (which is generally impacted by, among other things, our credit spreads and ratings) to commit and to deploy capital efficiently, particularly in our more capital-intensive businesses, including underwriting and sales, trading, financing and market-making activities, also affects our competitive position. We expect clients to continue to request that we provide loans or lending commitments in connection with certain investment banking activities.

It is possible that competition may become even more intense as we continue to compete with financial or other institutions that may be larger, or better capitalized, or may have a stronger local presence and longer operating history in certain geographies or products. Many of these firms have the ability

to offer a wide range of products and services through different platforms that may enhance their competitive position and could result in additional pricing pressure on our businesses.

We continue to experience price competition in some of our businesses. In particular, the ability to execute securities, derivatives and other financial instrument trades electronically on exchanges, swap execution facilities and other automated trading platforms, and the introduction and application of new technologies will likely continue the pressure on our revenues. The trend toward direct access to automated, electronic markets will likely continue as additional markets move to more automated trading platforms. We have experienced and will likely continue to experience competitive pressures in these and other areas in the future.

Our ability to compete successfully in the investment management industry is affected by several factors, including our reputation, investment objectives, quality of investment professionals, performance of investment strategies or product offerings relative to peers and appropriate benchmark indices, advertising and sales promotion efforts, fee levels, the effectiveness of and access to distribution channels and investment pipelines, the types and quality of products offered, and regulatory restrictions specific to FHCs. Our investment products, including alternative investment products, may compete with investments offered by other investment managers with passive investment products or who may be subject to less stringent legal and regulatory regimes than us.

Supervision and Regulation

As a major financial services firm, we are subject to extensive regulation by U.S. federal and state regulatory agencies and securities exchanges and by regulators and exchanges in each of the major markets where we conduct our business.

We continue to monitor the changing political, tax and regulatory environment. While it is likely that there will be changes in the way major financial institutions are regulated in both the U.S. and other markets in which we operate, it remains difficult to predict the exact impact these changes will have on our business, financial condition, results of operations and cash flows for a particular future period. We expect to remain subject to extensive supervision and regulation.

Financial Holding Company

Consolidated Supervision. We operate as a BHC and FHC under the BHC Act and are subject to comprehensive consolidated supervision, regulation and examination by the Federal Reserve. In particular, we are subject to (among other things): significant regulation and supervision; intensive scrutiny of our businesses and plans for expansion of those businesses; limitations on activities; a systemic risk regime that imposes heightened capital and liquidity requirements; restrictions on activities and investments imposed by a section of the BHC Act added by the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank Act") referred to as the "Volcker Rule"; and comprehensive derivatives regulation. In addition, the Consumer Financial Protection Bureau ("CFPB") has primary rulemaking, enforcement and examination authority over us and our subsidiaries with respect to federal consumer protection laws.

Scope of Permitted Activities. The BHC Act limits the activities of BHCs and FHCs and grants the Federal Reserve authority to limit our ability to conduct activities. We must obtain the Federal Reserve's approval before engaging in certain banking and other financial activities both in the U.S. and internationally.

The BHC Act grandfathers "activities related to the trading, sale or investment in commodities and underlying physical properties," provided that we were engaged in "any of such activities as of September 30, 1997 in the U.S." and provided that certain other conditions that are within our reasonable control are satisfied. We currently engage in our commodities activities pursuant to the BHC Act grandfather exemption, as well as other authorities under the BHC Act.

Activities Restrictions under the Volcker Rule. The Volcker Rule prohibits banking entities, including us and our affiliates, from engaging in certain proprietary trading activities, as defined in the Volcker Rule, subject to exemptions for underwriting, market-making, risk-mitigating hedging and certain other activities. The Volcker Rule also prohibits certain investments and relationships by banking entities with covered funds, as defined in the Volcker Rule, subject to a number of exemptions and exclusions. For additional information on the Volcker Rule covered fund restrictions, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Regulatory Requirements—Regulatory Developments and Other Matters—Covered Fund Restrictions under the Volcker Rule."

Capital Requirements. The Federal Reserve establishes capital requirements largely based on the Basel III capital standards established by the Basel Committee on Banking Supervision ("Basel Committee"), including well-capitalized standards, for large BHCs and evaluates our compliance with such requirements. The OCC establishes similar capital requirements and standards for Morgan Stanley Bank, N.A. ("MSBNA") and Morgan Stanley Private Bank, National Association ("MSPBNA") (together, our "U.S. Bank Subsidiaries").

The Basel Committee has published a comprehensive set of revisions to its Basel III Framework. The impact on us of any revisions to the Basel Committee's capital standards is uncertain and depends on future rulemakings by the U.S. banking agencies.

In addition, many of our regulated subsidiaries are subject to regulatory capital requirements, including regulated subsidiaries provisionally registered as swap dealers with the CFTC or conditionally registered as security-based swap dealers with the SEC or registered as broker-dealers or futures commission merchants.

For more information about the specific capital requirements applicable to us and our U.S. Bank Subsidiaries, as well as our subsidiaries that are swap dealers and security-based swap dealers, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Regulatory Requirements" and Note 17 to the financial statements.

Capital Planning, Stress Tests and Capital Distributions. The Federal Reserve has adopted capital planning and stress test requirements for large BHCs, including Morgan Stanley. For more information about our capital planning and stress test requirements, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Regulatory Requirements."

In addition, the Federal Reserve, the OCC and the FDIC have the authority to prohibit or to limit the payment of dividends by the banking organizations they supervise, including us and our U.S. Bank Subsidiaries, if, in the banking regulator's opinion, payment of a dividend would constitute an unsafe or unsound practice in light of the financial condition of the banking organization. For information about the Federal Reserve's restrictions on capital distributions for large BHCs, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Regulatory Requirements—Capital Plans, Stress Tests and the Stress Capital Buffer." All of these policies and other requirements could affect our ability to pay dividends and/or repurchase stock or require us to provide capital assistance to our U.S. Bank Subsidiaries under circumstances that we would not otherwise decide to do.

Liquidity Requirements. In addition to capital regulations, the U.S. banking agencies have adopted liquidity and funding standards, including the LCR, the NSFR, liquidity stress testing and associated liquidity reserve requirements.

For more information, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Balance Sheet—Regulatory Liquidity Framework."

Systemic Risk Regime. Under rules issued by the Federal Reserve, large BHCs, including Morgan Stanley, must conduct internal liquidity stress tests, maintain unencumbered highly liquid assets to meet projected net cash outflows for 30 days over the range of liquidity stress scenarios used in internal stress tests, and comply with various liquidity risk management requirements. These large BHCs also must comply with a range of risk management and corporate governance requirements.

The Federal Reserve also imposes single-counterparty credit limits ("SCCL") for large banking organizations. U.S. G-SIBs, including us, are subject to a limit of 15% of Tier 1 capital for aggregate net credit exposures to any "major counterparty" (defined to include other U.S. G-SIBs, foreign G-SIBs and non-bank systemically important financial institutions supervised by the Federal Reserve). In addition, we are subject to a limit of 25% of Tier 1 capital for aggregate net credit exposures to any other unaffiliated counterparty.

Under the Dodd-Frank Act, the Federal Reserve is required to adopt rules that would create a new early remediation framework to address financial distress or material management weaknesses. The Federal Reserve proposed such rules in 2012, but to date has not finalized these proposed rules. The Federal Reserve also has the ability to establish additional prudential standards, including those regarding contingent capital, enhanced public disclosures and limits on short-term debt, including off-balance sheet exposures. See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Regulatory Requirements—Total Loss-Absorbing Capacity, Long-Term Debt and Clean Holding Company Requirements."

If the Federal Reserve or the Financial Stability Oversight Council determines that a BHC with $250 billion or more in consolidated assets poses a "grave threat" to U.S. financial stability, the institution may be, among other things, restricted in its ability to merge or offer financial products and/or required to terminate activities and dispose of assets. See also "Capital Requirements" and "Liquidity Requirements" and "Resolution and Recovery Planning" herein.

Resolution and Recovery Planning. We are required to submit once every two years to the Federal Reserve and the FDIC a resolution plan that describes our strategy for a rapid and orderly resolution under the U.S. Bankruptcy Code in the event of our material financial distress or failure. Interim updates are required in certain limited circumstances, including material mergers or acquisitions or fundamental changes to our resolution strategy.

Our preferred resolution strategy, which is set out in our most recent resolution plan, is an SPOE strategy, which generally contemplates the provision of adequate capital and liquidity by the Parent Company to certain of its subsidiaries so that such subsidiaries have the resources necessary to implement the resolution strategy after the Parent Company has filed for bankruptcy.

Our next resolution plan is due July 1, 2023. Further, we submit an annual recovery plan to the Federal Reserve that outlines the steps that management could take over time to generate or conserve financial resources in times of prolonged financial stress.

Certain of our domestic and foreign subsidiaries are also subject to resolution and recovery planning requirements in

the jurisdictions in which they operate. For example, the FDIC currently requires certain insured depository institutions (“IDI”), including our U.S. Bank Subsidiaries, to submit a resolution plan every three years, that describes the IDI’s strategy for a rapid and orderly resolution in the event of material financial distress or failure of the IDI.

In addition, certain financial companies, including BHCs such as the Firm and certain of its subsidiaries, can be subject to a resolution proceeding under the orderly liquidation authority, with the FDIC being appointed as receiver, provided that determination of extraordinary financial distress and systemic risk is made by the U.S. Treasury Secretary in consultation with the U.S. President. Regulators have adopted certain orderly liquidation authority implementing regulations and may expand or clarify these regulations in the future. If we were subject to the orderly liquidation authority, the FDIC would have considerable powers, including: the power to remove directors and officers responsible for our failure and to appoint new directors and officers; the power to assign our assets and liabilities to a third party or bridge financial company without the need for creditor consent or prior court review; the ability to differentiate among our creditors, including treating certain creditors within the same class better than others, subject to a minimum recovery right on the part of disfavored creditors to receive at least what they would have received in bankruptcy liquidation; and broad powers to administer the claims process to determine distributions from the assets of the receivership. The FDIC has been developing an SPOE strategy that could be used to implement the orderly liquidation authority.

Regulators have also taken and proposed various actions to facilitate an SPOE strategy under the U.S. Bankruptcy Code, the orderly liquidation authority or other resolution regimes.

For more information about our resolution plan-related submissions and associated regulatory actions, see “Risk Factors—Legal, Regulatory and Compliance Risk,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Regulatory Requirements—Total Loss-Absorbing Capacity, Long-Term Debt and Clean Holding Company Requirements” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Regulatory Requirements—Resolution and Recovery Planning.”

Cyber and Information Security Risk Management and Protection of Client Information

The financial services industry faces increased global regulatory focus regarding cyber and information security risk management practices. Many aspects of our businesses are subject to cybersecurity legal and regulatory requirements enacted by U.S. federal and state governments and other non-U.S. jurisdictions. These requirements are generally aimed at codifying basic cybersecurity protections and mandating data breach notification requirements.

Our businesses are also subject to increasing privacy and data protection legal requirements concerning the use and protection of certain personal information with regard to clients, employees and others. These requirements impose mandatory privacy and data protection obligations, including providing for individual rights, enhanced governance and accountability requirements, and significant fines and litigation risk for noncompliance. In addition, several jurisdictions have enacted or proposed personal data localization requirements and restrictions on cross-border transfer of personal data that may restrict our ability to conduct business in those jurisdictions or create additional financial and regulatory burdens to do so.

Numerous jurisdictions have passed laws, rules and regulations in these areas and many are considering new or updated ones that could impact our businesses, particularly as the application, interpretation and enforcement of these laws, rules and regulations are often uncertain and evolving. Many aspects of our businesses are subject to legal requirements concerning the use and protection of certain customer information, as well as the privacy and cybersecurity laws referenced above. We have adopted measures designed to comply with these and related applicable requirements in all relevant jurisdictions.

U.S. Bank Subsidiaries

The U.S. Bank Subsidiaries are FDIC-insured depository institutions subject to supervision, regulation and examination by the OCC and are subject to the OCC’s risk governance guidelines, which establish heightened standards for a large IDI’s risk governance framework and the oversight of that framework by the IDI’s board of directors. The U.S. Bank Subsidiaries are also subject to prompt corrective action standards, which require the relevant federal banking regulator to take prompt corrective action with respect to a depository institution if that institution does not meet certain capital adequacy standards. In addition, BHCs, such as Morgan Stanley, are required to serve as a source of strength to their U.S. bank subsidiaries and commit resources to support these subsidiaries in the event such subsidiaries are in financial distress.

Our U.S. Bank Subsidiaries are also subject to Sections 23A and 23B of the Federal Reserve Act, which impose restrictions on certain transactions with affiliates, including any extension of credit to, or purchase of assets from an affiliate. These restrictions limit the total amount of credit exposure that our U.S. Bank Subsidiaries may have to any one affiliate and to all affiliates and require collateral for those exposures. Section 23B requires affiliate transactions to be on market terms.

As commonly controlled FDIC-insured depository institutions, each of the U.S. Bank Subsidiaries could be responsible for any loss to the FDIC from the failure of the other U.S. Bank Subsidiary.

Institutional Securities and Wealth Management

Broker-Dealer and Investment Adviser Regulation. Our primary U.S. broker-dealer subsidiaries, Morgan Stanley & Co. LLC ("MS&Co."), MSSB and E*TRADE Securities LLC, are registered broker-dealers with the SEC and in all 50 states, the District of Columbia, Puerto Rico and the U.S. Virgin Islands and are members of various self-regulatory organizations, including Financial Industry Regulatory Authority ("FINRA"), and various securities exchanges and clearing organizations. Broker-dealers are subject to laws and regulations covering all aspects of the securities business, including sales and trading practices, securities offerings, publication of research reports, use of customers' funds and securities, capital structure, risk management controls in connection with market access, recordkeeping and retention, and the conduct of their directors, officers, representatives and other associated persons. Broker-dealers are also regulated by securities administrators in those states where they do business. Our significant broker-dealer subsidiaries are members of the Securities Investor Protection Corporation.

MSSB is also a registered investment adviser with the SEC. MSSB's relationship with its investment advisory clients is subject to the fiduciary and other obligations imposed on investment advisers. The SEC and other supervisory bodies generally have broad administrative powers to address non-compliance, including the power to restrict or limit MSSB from carrying on its investment advisory and other asset management activities.

The Firm is subject to various regulations that affect broker-dealer sales practices and customer relationships, including the SEC's "Regulation Best Interest," which requires broker-dealers to act in the "best interest" of retail customers at the time a recommendation is made without placing the financial or other interests of the broker-dealer ahead of the interest of the retail customer.

Margin lending by our broker-dealers is regulated by the Federal Reserve's restrictions on lending in connection with purchases and short sales of securities. Our broker-dealers are also subject to maintenance and other margin requirements imposed under FINRA and other self-regulatory organization rules.

Our U.S. broker-dealer subsidiaries are subject to the SEC's net capital rule and the net capital requirements of various exchanges, other regulatory authorities and self-regulatory organizations. For more information about these requirements, see Note 17 to the financial statements.

Research Regulation. In addition to research-related regulations currently in place in the U.S. and other jurisdictions, regulators continue to focus on research conflicts of interest and may impose additional regulations.

Futures Activities and Certain Commodities Activities Regulation. MS&Co. and E*TRADE Futures LLC, as futures commission merchants, and MSSB, as an introducing broker, are subject to net capital requirements of, and certain of their activities are regulated by, the CFTC, the NFA, the CME Group, in its capacity as MS&Co.'s designated self-regulatory organization, and various commodity futures exchanges. Rules and regulations of the CFTC, NFA, the Joint Audit Committee and commodity futures exchanges address obligations related to, among other things, customer asset protections, including rules and regulations governing the segregation of customer funds, the use by futures commission merchants of customer funds, the margining of customer accounts and documentation entered into by futures commission merchants with their customers, recordkeeping and reporting obligations of futures commission merchants and introducing brokers, risk disclosure and risk management. Our commodities activities are subject to extensive laws and regulations in the U.S. and abroad.

Derivatives Regulation. We are subject to comprehensive regulation of our derivatives businesses, including regulations that impose margin requirements, public and regulatory reporting, central clearing and mandatory trading on regulated exchanges or execution facilities for certain types of swaps and security-based swaps (collectively, "Swaps").

CFTC and SEC rules require registration of swap dealers and security-based swap dealers, respectively, and impose numerous obligations on such registrants, including adherence to business conduct standards for all in-scope Swaps. We have provisionally or conditionally registered a number of U.S. and non U.S. swap dealers and security-based swap dealers. Swap dealers and security-based swap dealers regulated by a prudential regulator are subject to uncleared Swap margin requirements and minimum capital requirements established by the prudential regulators. Swap dealers and security-based swap dealers not subject to regulation by a prudential regulator are subject to uncleared Swap margin requirements and minimum capital requirements established by the CFTC and SEC, respectively. In some cases, the CFTC and SEC permit non-U.S. swap dealers and security-based swap dealers that do not have a prudential regulator to comply with applicable non-U.S. uncleared Swap margin and minimum capital requirements instead of direct compliance with CFTC or SEC requirements.

Investment Management

Many of the subsidiaries engaged in our investment management activities are registered as investment advisers with the SEC. Many aspects of our investment management activities are also subject to federal and state laws and regulations in place primarily for the protection of the investor or client. These laws and regulations generally grant supervisory agencies and bodies broad administrative powers, including the power to limit or restrict us from carrying on our investment management activities in the event that we fail to comply with such laws and regulations.

In addition, certain of our subsidiaries are U.S. registered broker-dealers and act as distributors to our proprietary mutual funds and as placement agents to certain private investment funds managed by our Investment Management business segment. Certain of our affiliates are registered as commodity trading advisors and/or commodity pool operators, or are operating under certain exemptions from such registration pursuant to CFTC rules and other guidance, and have certain responsibilities with respect to each pool they advise. Our investment management activities are subject to additional laws and regulations, including restrictions on sponsoring or investing in, or maintaining certain other relationships with, covered funds, as defined by the Volcker Rule, subject to certain limited exemptions. See also “Financial Holding Company—Activities Restrictions under the Volcker Rule,” “Institutional Securities and Wealth Management—Broker-Dealer and Investment Adviser Regulation,” “Institutional Securities and Wealth Management—Regulation of Futures Activities and Certain Commodities Activities,” and “Institutional Securities and Wealth Management—Derivatives Regulation” herein and “Non-U.S. Regulation” herein for a discussion of other regulations that impact our Investment Management business activities.

U.S. Consumer Protection

We are subject to supervision and regulation by the CFPB with respect to U.S. federal consumer protection laws. Federal consumer protection laws to which we are subject include the Gramm-Leach-Bliley Act’s privacy provisions, Equal Credit Opportunity Act, Home Mortgage Disclosure Act, Electronic Fund Transfer Act, Fair Credit Reporting Act, Real Estate Settlement Procedures Act, Truth in Lending Act and Truth in Savings Act, all of which are enforced by the CFPB. We are also subject to certain federal consumer protection laws enforced by the OCC, including the Servicemembers Civil Relief Act. Furthermore, we are subject to certain state consumer protection laws, and under the Dodd-Frank Act, state attorneys general and other state officials are empowered to enforce certain federal consumer protection laws and regulations. These federal and state consumer protection laws apply to a range of our activities.

Non-U.S. Regulation

All of our businesses are regulated extensively by non-U.S. regulators, including governments, central banks and regulatory bodies, securities exchanges, commodity exchanges, and self-regulatory organizations, especially in those jurisdictions in which we maintain an office. Certain regulators have prudential, business conduct and other authority over us or our subsidiaries, as well as powers to limit or restrict us from engaging in certain businesses or to conduct administrative proceedings that can result in censures, fines, asset seizures and forfeitures, the issuance of cease-and-desist orders, or the suspension or expulsion of a regulated entity or its affiliates. Certain of our subsidiaries are subject to capital, liquidity, leverage and other prudential requirements that are applicable under non-U.S. law.

Financial Crimes Program

Our Financial Crimes program is coordinated and implemented on an enterprise-wide basis and supports our financial crime prevention efforts across all regions and business units, with responsibility for governance and oversight, as well as execution of our anti-money laundering (“AML”), economic sanctions (“Sanctions”), anti-boycott, anti-corruption, anti-tax evasion, and government and political activities compliance programs.

In the U.S., the Bank Secrecy Act, as amended by the USA PATRIOT Act of 2001 and the Anti-Money Laundering Act of 2020, imposes significant obligations on financial institutions to detect and deter money laundering and terrorist financing activity, including requiring banks, BHCs and their subsidiaries, broker-dealers, futures commission merchants, introducing brokers and mutual funds to develop and implement AML programs, verify the identity of customers that maintain accounts, and monitor and report suspicious activity to appropriate law enforcement or regulatory authorities. Outside of the U.S., applicable laws, rules and regulations similarly require designated types of financial institutions to implement AML programs.

We are also subject to Sanctions, such as regulations and economic sanctions programs administered by the U.S. government, including the U.S. Treasury Department’s Office of Foreign Assets Control (“OFAC”) and the U.S. Department of State, and similar sanctions programs imposed by foreign governments or global or regional multilateral organizations. In addition, we are subject to anti-corruption laws, such as the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act, in the jurisdictions in which we operate. Anti-corruption laws generally prohibit offering, promising, giving or authorizing others to give anything of value, either directly or indirectly, to a government official or private party in order to influence official action or otherwise gain an unfair business advantage, such as to obtain or retain business.

Human Capital

Employees and Culture

Our employees are our most important asset. With offices in 41 countries, we have approximately 82 thousand employees across the globe as of December 31, 2022, whom we depend upon to build value for our clients and shareholders. To facilitate talent attraction and retention, we strive to make Morgan Stanley a diverse and inclusive workplace, with a strong culture and opportunities for our employees to grow and develop in their career. We support our employees with competitive compensation, benefits, and health and wellbeing programs.

Our core values guide decision making aligned to the expectations of our employees, clients, shareholders,

regulators, directors and the communities in which we operate. These guiding values—*Put Clients First, Do the Right Thing, Lead with Exceptional Ideas, Commit to Diversity and Inclusion, and Give Back*—are at the heart of our workplace culture and underpin our success. Our Code of Conduct is central to our expectation that employees embody our values. Every new hire and every employee annually is required to certify to their understanding of and adherence to the Code of Conduct. We also invite employee feedback on our culture and workplace through our ongoing employee engagement surveys. For a further discussion of the culture, values, and conduct of employees, see "Quantitative and Qualitative Disclosures about Risk—Risk Management."

Diversity and Inclusion

We believe a diverse and inclusive workforce is important to Morgan Stanley's continued success and our ability to serve our clients. Our programming to support our workforce helps build a sense of community and belonging for all colleagues. We have deepened our investments to recruit, advance and retain diverse talent through a holistic approach, focused on professional development, health and wellbeing, benefits, and culture. Consistent with this approach, we strive to increase diverse representation among our workforce and drive greater accountability for leaders. The Morgan Stanley Institute for Inclusion is also a key part of our strategy.

Talent Development and Retention

We are committed to the development of our workforce and supporting mobility and career growth. Our talent development programs are designed to provide employees with the resources they need to help achieve their career goals, build management skills and lead their organizations. We believe that supporting employee development and growth will help retention in the long run. As the work environment continues to evolve, we are making investments across technology platforms to modernize our approach to talent development, workforce planning and internal mobility.

We continue to focus on unlocking the potential of our employees by providing differentiated leadership programs. For these programs, we have curated content to support employees as they progress in their career at the firm.

Compensation, Financial and Employee Wellbeing

We provide responsible and effective compensation programs that reinforce our values and culture through four key objectives: deliver pay for sustainable performance, attract and retain top talent, align with shareholder interests and mitigate excessive risk taking. In addition to salaries, these programs (which vary by location) include annual bonuses, retirement savings plans with matching contributions, an employee stock purchase plan, student loan refinancing and a financial wellbeing program in the U.S. and the U.K. To promote equitable rewards for all employees, we have enhanced our practices to support fair and consistent compensation and reward decisions based on merit, perform ongoing reviews of compensation decisions, and conduct regular assessments of our rewards structure.

Our employees' health is also central to our ongoing success. We support the physical, mental and financial wellbeing of our global workforce and their families by offering programs focusing on awareness, prevention and access. Offerings include: health care and insurance benefits; mental health resources; flexible spending and health savings accounts; paid time-off; flexible work schedules; family leave; child and elder care resources; financial help with fertility; adoption and surrogacy services; and tuition assistance, among many others. Onsite services in our principal locations include health centers, mental health counseling, fitness centers and physical therapy.

In 2022, we enhanced our programs to further support employees. Globally, we increased the amount of paid leave for new parents, introduced paid family caregiver leave and enhanced our fitness subsidy. In the U.S., we expanded our mental health benefit and partnered with a national provider that delivers concierge in-person and virtual primary care for adults and children. Additionally, our new Health Assistants help employees understand and maximize Firm resources and guide them through complex health issues.

For more detailed information on our human capital programs and initiatives, see "Our People" in our 2021 Sustainability Report and our 2022 Diversity and Inclusion Report (both found on our website). The reports and information elsewhere on our website are not incorporated by reference into, and do not form any part of, this Annual Report.

Human Capital Metrics

Category		Metric	At December 31, 2022
Employees	Employees by geography (thousands)	Americas	55
		Asia Pacific	17
		EMEA	10
Culture	Employee engagement[1]	% Proud to work at Morgan Stanley	90 %
Diversity and Inclusion	Global gender representation	% Women	40 %
		% Women officer[2]	28 %
	U.S. ethnic diversity representation	% Ethnically diverse[3]	34 %
		% Ethnically diverse officer[2,3]	28 %
Retention	Voluntary attrition in 2022	% Global	12 %
	Tenure	Management Committee average length of service (years)	19
		All employees average length of service (years)	6
Compensation	Compensation and benefits	Total compensation and benefits expense in 2022 (millions)	$ 23,053

1. The percentage disclosed is based on the 2021 biennial employee engagement survey results, which reflect responses from 91% of employees.
2. Officer includes Managing Directors, Executive Directors and Vice Presidents.
3. U.S. ethnically diverse designations align with the Equal Employment Opportunity Commission's ethnicity and race categories and includes American Indian or Native Alaskan, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or Pacific Islander, and two or more races.

Information about Our Executive Officers

The executive officers of Morgan Stanley and their age and titles as of February 24, 2023 are set forth below. Business experience is provided in accordance with SEC rules.

Mandell L. Crawley (47). Executive Vice President and Chief Human Resources Officer (since February 2021). Head of Private Wealth Management (June 2017 to January 2021). Chief Marketing Officer (September 2014 to June 2017). Head of National Business Development and Talent Management for Wealth Management (June 2011 to September 2014). Divisional Business Development Officer (May 2010 to June 2011). Regional Business Development Officer (May 2009 to May 2010). Head of Field Sales and Marketing (February 2008 to May 2009). Head of Fixed Income Capital Markets Sales and Distribution for Wealth Management (April 2004 to February 2008).

James P. Gorman (64). Chairman of the Board of Directors and Chief Executive Officer of Morgan Stanley (since January 2012). President and Chief Executive Officer (January 2010 to December 2011) and member of the Board of Directors (since January 2010). Co-President (December 2007 to December 2009) and Co-Head of Strategic Planning (October 2007 to December 2009). President and Chief Operating Officer of Wealth Management (February 2006 to April 2008).

Eric F. Grossman (56). Executive Vice President and Chief Legal Officer of Morgan Stanley (since January 2012) and Chief Administrative Officer (since July 2022). Global Head of Legal (September 2010 to January 2012). Global Head of Litigation (January 2006 to September 2010) and General Counsel of the Americas (May 2009 to September 2010). General Counsel of Wealth Management (November 2008 to September 2010). Partner at the law firm of Davis Polk & Wardwell LLP (June 2001 to December 2005).

Keishi Hotsuki (60). Executive Vice President (since May 2014) and Chief Risk Officer of Morgan Stanley (since May 2011). Interim Chief Risk Officer (January 2011 to May 2011) and Head of Market Risk Department (March 2008 to April 2014). Global Head of Market Risk Management at Merrill Lynch (June 2005 to September 2007).

Edward N. Pick (54). Co-President and Co-Head of Corporate Strategy (since June 2021). Head of Institutional Securities (since July 2018). Global Head of Sales and Trading (October 2015 to July 2018). Head of Global Equities (March 2011 to October 2015). Co-Head of Global Equities (April 2009 to March 2011). Co-Head of Global Capital Markets (July 2008 to April 2009). Co-Head of Global Equity Capital Markets (December 2005 to July 2008).

Andrew M. Saperstein (56). Co-President (since June 2021) and Head of Wealth Management (since April 2019). Co-Head of Wealth Management (January 2016 to April 2019). Co-Chief Operating Officer of Institutional Securities (March 2015 to January 2016). Head of Wealth Management Investment Products and Services (June 2012 to March 2015).

Daniel A. Simkowitz (57). Head of Investment Management (since October 2015) and Co-Head of Corporate Strategy (since June 2021). Co-Head of Global Capital Markets (March 2013 to September 2015). Chairman of Global Capital Markets (November 2009 to March 2013). Managing Director in Global Capital Markets (December 2000 to November 2009).

Sharon Yeshaya (43). Executive Vice President and Chief Financial Officer (since June 2021). Head of Investor Relations (June 2016 to May 2021). Chief of Staff in the Office of the Chairman and CEO (January 2015 to May 2016). Co-Head of New Product Origination for Derivative Structured Products (December 2012 to December 2014).

Risk Factors

For a discussion of the risks and uncertainties that may affect our future results and strategic objectives, see “Forward-Looking Statements” preceding “Business” and “Return on Tangible Common Equity Goal” in “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

Market Risk

Market risk refers to the risk that a change in the level of one or more market prices, rates, spreads, indices, volatilities, correlations or other market factors, such as market liquidity, will result in losses for a position or portfolio owned by us. For more information on how we monitor and manage market risk, see “Quantitative and Qualitative Disclosures about Risk—Market Risk.”

Our results of operations may be materially affected by market fluctuations and by global financial market and economic conditions and other factors.

Our results of operations have been in the past and may, in the future, be materially affected by global financial market and economic conditions, both directly and indirectly through their impact on client activity levels. These include the level and volatility of equity, fixed income and commodity prices, the level and term structure of interest rates, inflation and currency values, the level of other market indices, fiscal or monetary policies established by central banks and financial regulators, and uncertainty concerning government shutdowns, debt ceilings or funding, which may be driven by economic conditions, market uncertainty or lack of confidence among investors and clients due to the effects of widespread events such as global pandemics, natural disasters, climate-related incidents, acts of war or aggression, geopolitical instability, changes to global trade policies and the implementation of tariffs or protectionist trade policies and other factors, or a combination of these or other factors. For example, in 2022, the global economic and geopolitical environment was characterized by persistent inflation, rising interest rates, volatility in global financial markets (leading to, among other things, a decline in equity prices), supply chain complications, recessionary fears, and geopolitical uncertainty regarding the war between Russia and Ukraine and its impact on the global markets, including the energy markets.

The results of our Institutional Securities business segment, particularly results relating to our involvement in primary and secondary markets for all types of financial products, are subject to substantial market fluctuations due to a variety of factors that we cannot control or predict with great certainty. These fluctuations impact results by causing variations in business flows and activity and in the fair value of securities and other financial products. Fluctuations also occur due to the level of global market activity, which, among other things, can be impacted by market uncertainty or lack of investor and client confidence due to unforeseen economic, geopolitical or market conditions that in turn affect the size, number and timing of investment banking client assignments and transactions and the realization of returns from our principal investments.

Periods of unfavorable market or economic conditions may have adverse impacts on the level of individual investor confidence and participation in the global markets and/or the level of and mix of client assets, which would negatively impact the results of our Wealth Management business segment.

Substantial market fluctuations could also cause variations in the value of our investments in our funds, the flow of investment capital into or from AUM, and the way customers allocate capital among money market, equity, fixed income or other investment alternatives, which could negatively impact the results of our Investment Management business segment.

The value of our financial instruments may be materially affected by market fluctuations. Market volatility, illiquid market conditions and disruptions in the markets may make it difficult to value and monetize certain of our financial instruments, particularly during periods of market uncertainty or displacement. Subsequent valuations in future periods, in light of factors then prevailing, may result in significant changes in the value of these instruments and may adversely impact historical or prospective fees and performance-based income (also known as incentive fees, which include carried interest) in respect of certain businesses. In addition, at the time of any sales and settlements of these financial instruments, the price we ultimately realize will depend on the demand and liquidity in the market at that time and may be materially lower than their current fair value. Any of these factors could cause a decline in the value of our financial instruments, which may adversely affect our results of operations in future periods.

In addition, financial markets are susceptible to severe events evidenced by rapid depreciation in asset values accompanied by a reduction in asset liquidity. Under these extreme conditions, hedging and other risk management strategies may not be as effective at mitigating trading losses as they would be under more normal market conditions. Moreover, under these conditions, market participants are particularly exposed to trading strategies employed by many market participants simultaneously and on a large scale, which could lead to increased individual counterparty risk for our businesses. Although our risk management and monitoring processes seek to quantify and mitigate risk to more extreme market moves, severe market events have historically been difficult to predict, and we could realize significant losses if extreme market events were to occur.

Holding large and concentrated positions may expose us to losses.

Concentration of risk may reduce revenues or result in losses in our market-making, investing, underwriting (including

block trading), and lending businesses (including margin lending) in the event of unfavorable market movements. We commit substantial amounts of capital to these businesses, which often results in our taking large positions in the securities of, or making large loans to, a particular issuer or issuers in a particular industry, country or region. In the event we hold a concentrated position larger than those held by competitors, we may incur larger losses. For further information regarding our country risk exposure, see also “Quantitative and Qualitative Disclosures about Risk—Country and Other Risks.”

Credit Risk

Credit risk refers to the risk of loss arising when a borrower, counterparty or issuer does not meet its financial obligations to us. For more information on how we monitor and manage credit risk, see “Quantitative and Qualitative Disclosures about Risk—Credit Risk.”

We are exposed to the risk that third-parties that are indebted to us will not perform their obligations.

We incur significant credit risk exposure through our Institutional Securities business segment. This risk may arise from a variety of business activities, including, but not limited to: extending credit to clients through various lending commitments; entering into swap or other derivative contracts under which counterparties have obligations to make payments to us; providing short- or long-term funding that is secured by physical or financial collateral whose value may at times be insufficient to fully cover the loan repayment amount; posting margin and/or collateral and other commitments to clearing houses, clearing agencies, exchanges, banks, securities firms and other financial counterparties; and investing and trading in securities and loan pools, whereby the value of these assets may fluctuate based on realized or expected defaults on the underlying obligations or loans.

We also incur credit risk in our Wealth Management business segment lending to mainly individual investors, including, but not limited to, margin- and securities-based loans collateralized by securities, and residential mortgage loans, including HELOCs.

Our valuations related to, and reserves for losses on, credit exposures rely on complex models, estimates, and subjective judgments about the future. While we believe current valuations and reserves adequately address our perceived levels of risk, future economic conditions, including inflation and changes in real estate values, that differ from or are more severe than forecast, inaccurate models or assumptions, or external factors such as global pandemics, natural disasters, or geopolitical events, could lead to inaccurate measurement of or deterioration of credit quality of our borrowers and counterparties or the value of collateral and result in unexpected losses. We may also incur higher than anticipated credit losses as a result of (i) disputes with counterparties over the valuation of collateral or (ii) actions taken by other lenders that may negatively impact the valuation of collateral. In cases where we foreclose on collateral, sudden declines in the value or liquidity of collateral may result in significant losses to us despite our (i) credit monitoring; (ii) over-collateralization; (iii) ability to call for additional collateral; or (iv) ability to force repayment of the underlying obligation, especially where there is a single type of collateral supporting the obligation. In addition, in the longer term, climate change may have a negative impact on the financial condition of our clients, which may decrease revenues from those clients and increase the credit risk associated with loans and other credit exposures to those clients. Certain of our credit exposures may be concentrated by counterparty, product, industry or country. Although our models and estimates account for correlations among related types of exposures, a change in the market environment for a concentrated product or an external factor impacting a concentrated counterparty, industry or country may result in credit losses in excess of amounts forecast.

In addition, as a clearing member of several central counterparties, we are responsible for the defaults or misconduct of our customers and could incur financial losses in the event of default by other clearing members. Although we regularly review our credit exposures, default risk may arise from events or circumstances that are difficult to detect or foresee.

A default by a large financial institution could adversely affect financial markets.

The commercial soundness of many financial institutions and certain other large financial services firms may be closely interrelated as a result of credit, trading, clearing or other relationships among such entities. Increased centralization of trading activities through particular clearing houses, central agents or exchanges may increase our concentration of risk with respect to these entities. As a result, concerns about, or a default or threatened default by, one or more such entities could lead to significant market-wide liquidity and credit problems, losses or defaults by other institutions. This is sometimes referred to as systemic risk and may adversely affect financial intermediaries, such as clearing houses, clearing agencies, exchanges, banks and securities firms, with which we interact on a daily basis and, therefore, could adversely affect us. See also “Systemic Risk Regime” under “Business—Supervision and Regulation—Financial Holding Company.”

Operational Risk

Operational risk refers to the risk of loss, or of damage to our reputation, resulting from inadequate or failed processes or systems, from human factors or from external events (*e.g.*, cyber-attacks or third-party vulnerabilities) that may manifest as, for example, loss of information, business disruption, theft and fraud, legal and compliance risks, or damage to physical assets. We may incur operational risk across the full scope of

our business activities, including revenue-generating activities and support and control groups (*e.g.*, information technology and trade processing). Legal, regulatory and compliance risk is included in the scope of operational risk and is discussed below under “Legal, Regulatory and Compliance Risk.” For more information on how we monitor and manage operational risk, see “Quantitative and Qualitative Disclosures about Risk—Operational Risk.”

We are subject to operational risks, including a failure, breach or other disruption of our operations or security systems or those of our third-parties (or third-parties thereof), as well as human error or malfeasance, which could adversely affect our businesses or reputation.

Our businesses are highly dependent on our ability to process and report, on a daily basis, a large number of transactions across numerous and diverse markets in many currencies. We may introduce new products or services or change processes or reporting, including in connection with new regulatory requirements, or integration of processes or systems of acquired companies, resulting in new operational risk that we may not fully appreciate or identify.

The trend toward direct access to automated, electronic markets and the move to more automated trading platforms has resulted in the use of increasingly complex technology that relies on the continued effectiveness of the programming code and integrity of the data to process the trades. We rely on the ability of our employees, our consultants, our internal systems and systems at technology centers maintained by unaffiliated third-parties to operate our different businesses and process a high volume of transactions. Unusually high trading volumes or site usage could cause our systems to operate at an unacceptably slow speed or even fail. Disruptions to, destruction of, instability of or other failure to effectively maintain our information technology systems or external technology that allows our clients and customers to use our products and services (including our self-directed brokerage platform) could harm our business and our reputation.

As a major participant in the global capital markets, we face the risk of incorrect valuation or risk management of our trading positions due to flaws in data, models, electronic trading systems or processes or due to fraud or cyber-attack. We also face the risk of operational failure or disruption of any of the clearing agents, exchanges, clearing houses or other financial intermediaries we use to facilitate our lending, securities and derivatives transactions. In addition, in the event of a breakdown or improper operation or disposal of our or a direct or indirect third-party’s systems (or third-parties thereof), processes or information assets, or improper or unauthorized action by third-parties, including consultants and subcontractors or our employees, we have in the past and may receive regulatory sanctions, and could suffer financial loss, an impairment to our liquidity position, a disruption of our businesses, or damage to our reputation.

In addition, the interconnectivity of multiple financial institutions with central agents, exchanges and clearing houses, and the increased importance of these entities, increases the risk that an operational failure at one institution or entity may cause an industry-wide operational failure that could materially impact our ability to conduct business. Furthermore, the concentration of Firm and personal information held by a handful of third-parties increases the risk that a breach at a key third-party may cause an industry-wide event that could significantly increase the cost and risk of conducting business.

There can be no assurance that our business contingency and security response plans fully mitigate all potential risks to us. Our ability to conduct business may be adversely affected by a disruption in the infrastructure that supports our businesses and the communities where we are located. This may include a disruption involving physical site access; software flaws and vulnerabilities; cybersecurity incidents; terrorist activities; political unrest; disease pandemics; catastrophic events; climate-related incidents and natural disasters (such as earthquakes, tornadoes, hurricanes and wildfires); electrical outages; environmental hazards; computer servers; communication platforms or other services we use; and our employees or third-parties with whom we conduct business. Although we employ backup systems for our data, those backup systems may be unavailable following a disruption, the affected data may not have been backed up or may not be recoverable from the backup, or the backup data may be costly to recover, which could adversely affect our business.

Notwithstanding evolving technology and technology-based risk and control systems, our businesses ultimately rely on people, including our employees and those of third-parties with which we conduct business. As a result of human error or engagement in violations of applicable policies, laws, rules or procedures, certain errors or violations are not always discovered immediately by our technological processes or by our controls and other procedures, which are intended to prevent and detect such errors or violations. These can include calculation or input errors, inadvertent or duplicate payments, mistakes in addressing emails or other communications, errors in software or model development or implementation, or errors in judgment, as well as intentional efforts to disregard or circumvent applicable policies, laws, rules or procedures. Human errors and malfeasance, even if promptly discovered and remediated, can result in material losses and liabilities for us.

We conduct business in various jurisdictions outside the U.S., including jurisdictions that may not have comparable levels of protection for their corporate assets such as intellectual property, trademarks, trade secrets, know-how, and customer information and records. The protection afforded in those jurisdictions may be less established and/or predictable than in the U.S. or other jurisdictions in which we operate. As a result, there may also be heightened risks associated with the potential theft of their data, technology and intellectual property in those jurisdictions by domestic or foreign actors,

including private parties and those affiliated with or controlled by state actors. Additionally, we are subject to complex and evolving U.S. and international laws and regulations governing cybersecurity, privacy and data governance, transfer and protection, which may differ and potentially conflict, in various jurisdictions. Any theft of data, technology or intellectual property may negatively impact our operations and reputation, including disrupting the business activities of our subsidiaries, affiliates, joint ventures or clients conducting business in those jurisdictions.

A cyber-attack, information or security breach or a technology failure of ours or a third-party could adversely affect our ability to conduct our business, manage our exposure to risk, or result in disclosure or misuse of confidential or proprietary information and otherwise adversely impact our results of operations, liquidity and financial condition, as well as cause reputational harm.

Cybersecurity risks for financial institutions have significantly increased in recent years in part because of the proliferation of new technologies, the use of the internet, mobile telecommunications and cloud technologies to conduct financial transactions, and the increased sophistication and activities of organized crime, hackers, terrorists and other external extremist parties, including foreign state actors, in some circumstances as a means to promote political ends. Global events and geopolitical instability (including the war between Russia and Ukraine) may lead to increased nation state targeting of financial institutions in the U.S. and abroad. Any of these parties may also attempt to fraudulently induce employees, customers, clients, vendors, or other third-parties or users of our systems to disclose sensitive information in order to gain access to our data or that of our employees or clients.

Information security risks may also derive from human error, fraud or malice on the part of our employees or third-parties, or may result from accidental technological failure. For example, human error has led to the loss of the Firm's physical data-bearing devices in the past. These risks may be heightened by several factors, including remote work, or as a result of the integration of acquisitions and other strategic initiatives that may subject us to new technology, customers or third-party providers. In addition, third-parties with whom we do business or share information, our regulators, and each of their service providers, as well as the third-parties with whom our customers and clients share information used for authentication, may also be sources of cybersecurity and information security risks, particularly where activities of customers are beyond our security and control systems. There is no guarantee that the measures we take will provide absolute security or recoverability given that the techniques used in cyber-attacks are complex and frequently change, and are difficult to anticipate.

Like other financial services firms, the Firm, its third-party providers, and its clients continue to be the subject of unauthorized access attacks, mishandling or misuse of information, computer viruses or malware, cyber-attacks designed to obtain confidential information, destroy data, disrupt or degrade service, sabotage systems or cause other damage, ransomware, denial of service attacks, data breaches, social engineering attacks and other events. There can be no assurance that such unauthorized access, mishandling or misuse of information, or cyber incidents will not occur in the future, and they could occur more frequently and on a more significant scale.

We maintain a significant amount of personal and confidential information on our customers, clients and certain counterparties that we are required to protect under various state, federal and international data protection and privacy laws. These laws may be in conflict with one another or courts and regulators may interpret them in ways that we had not anticipated or that adversely affect our business. A cyber-attack, information or security breach, or a technology failure of ours or of a third-party could jeopardize our or our clients', employees', partners', vendors' or counterparties' personal, confidential, proprietary or other information processed and stored in, and transmitted through, our and our third-parties' computer systems. Furthermore, such events could cause interruptions or malfunctions in our, our clients', employees', partners', vendors', counterparties' or third-parties' operations, as well as the unauthorized release, gathering, monitoring, misuse, loss or destruction of confidential, proprietary and other information of ours, our employees, our customers or of other third-parties. Any of these events could result in reputational damage with our clients and the market, client dissatisfaction, additional costs to us to maintain and update our operational and security systems and infrastructure, violation of the applicable data protection and privacy laws, regulatory investigations and enforcement actions, litigation exposure, or fines or penalties, any of which could adversely affect our business, financial condition or results of operations.

Given our global footprint and the high volume of transactions we process, the large number of clients, partners, vendors and counterparties with which we do business, and the increasing sophistication of cyber-attacks, a cyber-attack, information or security breach could occur and persist for an extended period of time without detection. It could take considerable time for us to determine the scope, extent, amount and type of information compromised, and the impact of such an attack may not be fully understood. During such time we would not necessarily know the extent of the harm or how best to remediate it, and certain errors or actions could be repeated or compounded before they are discovered and remediated, all or any of which would further increase the costs and consequences of a cyber-attack or data breach.

While many of our agreements with partners and third-party vendors include indemnification provisions, we may not be able to recover sufficiently, or at all, under such provisions to adequately offset any losses we may incur. In addition, although we maintain insurance coverage that may, subject to policy terms and conditions, cover certain aspects of cyber

and information security risks, such insurance coverage may be insufficient to cover all losses we may incur.

We continue to make investments with a view toward maintaining and enhancing our cybersecurity and information security posture. The cost of managing cyber and information security risks and attacks along with complying with new, increasingly expansive, and evolving regulatory requirements could adversely affect our results of operations and business.

Liquidity Risk

Liquidity risk refers to the risk that we will be unable to finance our operations due to a loss of access to the capital markets or difficulty in liquidating our assets. Liquidity risk also encompasses our ability (or perceived ability) to meet our financial obligations without experiencing significant business disruption or reputational damage that may threaten our viability as a going concern, as well as the associated funding risks triggered by the market or idiosyncratic stress events that may negatively affect our liquidity and may impact our ability to raise new funding. For more information on how we monitor and manage liquidity risk, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources" and "Quantitative and Qualitative Disclosures about Risk—Liquidity Risk."

Liquidity is essential to our businesses and we rely on external sources to finance a significant portion of our operations.

Liquidity is essential to our businesses. Our liquidity could be negatively affected by our inability to raise funding in the long-term or short-term debt capital markets, our inability to access the secured lending markets, our inability to attract and retain deposits, or unanticipated outflows of cash or collateral by customers or clients. Factors that we cannot control, such as disruption of the financial markets or negative views about the financial services industry generally, including concerns regarding fiscal matters in the U.S. and other geographic areas, could impair our ability to raise funding.

In addition, our ability to raise funding could be impaired if investors or lenders develop a negative perception of our long-term or short-term financial prospects due to factors such as an incurrence of large trading losses, a downgrade by the rating agencies, a decline in the level of our business activity, if regulatory authorities take significant action against us or our industry, or if we discover significant employee misconduct or illegal activity.

If we are unable to raise funding using the methods described above, we would likely need to finance or liquidate unencumbered assets, such as our investment portfolios or trading assets, to meet maturing liabilities or other obligations. We may be unable to sell some of our assets or we may have to sell assets at a discount to market value, either of which could adversely affect our results of operations, cash flows and financial condition.

Our borrowing costs and access to the debt capital markets depend on our credit ratings.

The cost and availability of unsecured financing generally are impacted by (among other things) our long-term and short-term credit ratings. The rating agencies continue to monitor certain Firm-specific and industry-wide factors that are important to the determination of our credit ratings. These include governance, capital adequacy, the level and quality of earnings, liquidity and funding, risk appetite and management, asset quality, strategic direction, business mix, regulatory or legislative changes, macroeconomic environment and perceived levels of support, and it is possible that the rating agencies could downgrade our ratings and those of similar institutions.

Our credit ratings also can have an adverse impact on certain trading revenues, particularly in those businesses where longer term counterparty performance is a key consideration, such as OTC and other derivative transactions, including credit derivatives and interest rate swaps. In connection with certain OTC trading agreements and certain other agreements associated with our Institutional Securities business segment, we may be required to provide additional collateral to, or immediately settle any outstanding liability balance with, certain counterparties in the event of a credit rating downgrade.

Termination of our trading and other agreements could cause us to sustain losses and impair our liquidity by requiring us to find other sources of financing or to make significant payments in the form of cash or securities. The additional collateral or termination payments that may occur in the event of a future credit rating downgrade vary by contract and can be based on ratings by either or both of Moody's Investors Service, Inc. and S&P Global Ratings. See also "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Credit Ratings—Incremental Collateral or Terminating Payments."

We are a holding company and depend on payments from our subsidiaries.

The Parent Company has no operations and depends on dividends, distributions and other payments from its subsidiaries to fund dividend payments and to fund all payments on its obligations, including debt obligations. Regulatory restrictions, tax restrictions or elections and other legal restrictions may limit our ability to transfer funds freely, either to or from our subsidiaries. In particular, many of our subsidiaries, including our bank and broker-dealer subsidiaries, are subject to laws, regulations and self-regulatory organization rules that, in certain circumstances, limit, as well as permit regulatory bodies to block or reduce, the flow of funds to the Parent Company, or that prohibit such

transfers or dividends altogether, including steps to "ring fence" entities by regulators outside the U.S. to protect clients and creditors of such entities in the event of financial difficulties involving such entities.

These laws, regulations and rules may hinder our ability to access funds that we may need to make payments on our obligations. Furthermore, as a BHC, we may become subject to a prohibition or to limitations on our ability to pay dividends. The Federal Reserve, the OCC and the FDIC have the authority, and under certain circumstances the duty, to prohibit or to limit the payment of dividends by the banking organizations they supervise, including us and our U.S. Bank Subsidiaries. See "We may be prevented from paying dividends or taking other capital actions because of regulatory constraints or revised regulatory capital requirements" under "Legal, Regulatory and Compliance Risk" herein.

Our liquidity and financial condition have in the past been, and in the future could be, adversely affected by U.S. and international markets and economic conditions.

Our ability to raise funding in the long-term or short-term debt capital markets or the equity markets, or to access secured lending markets, has in the past been, and could in the future be, adversely affected by conditions in the U.S. and international markets and economies.

In particular, our cost and availability of funding in the past have been, and may in the future be, adversely affected by illiquid credit markets, interest rates, and wider credit spreads. Significant turbulence in the U.S., the E.U. and other international markets and economies could adversely affect our liquidity and financial condition and the willingness of certain counterparties and customers to do business with us.

Legal, Regulatory and Compliance Risk

Legal, regulatory and compliance risk includes the risk of legal or regulatory sanctions, material financial loss, including fines, penalties, judgments, damages and/or settlements, limitations on our business, or loss to reputation we may suffer as a result of our failure to comply with laws, regulations, rules, related self-regulatory organization standards and codes of conduct applicable to our business activities. This risk also includes contractual and commercial risk, such as the risk that a counterparty's performance obligations will be unenforceable. It also includes compliance with AML, anti-corruption and terrorist financing rules and regulations. For more information on how we monitor and manage legal, regulatory and compliance risk, see "Quantitative and Qualitative Disclosures about Risk—Legal and Compliance Risk."

The financial services industry is subject to extensive regulation, and changes in regulation will impact our business.

Like other major financial services firms, we are subject to extensive regulation by U.S. federal and state regulatory agencies and securities exchanges and by regulators and exchanges in each of the major markets where we conduct our business, including an increasing number of complex sanctions regimes. These laws and regulations, which continue to increase in volume and complexity, significantly affect the way and costs of doing business and can restrict the scope of our existing businesses and limit our ability to expand our product offerings and pursue certain investments.

The Firm and its employees are subject to wide-ranging regulation and supervision, which, among other things, subject us to intensive scrutiny of our businesses and any plans for expansion of those businesses through acquisitions or otherwise, limitations on new activities, a systemic risk regime that imposes heightened capital and liquidity and funding requirements and other enhanced prudential standards, resolution regimes and resolution planning requirements, requirements for maintaining minimum amounts of TLAC and external long-term debt, restrictions on activities and investments imposed by the Volcker Rule, comprehensive derivatives regulation, commodities regulation, market structure regulation, consumer protection regulation, tax regulations, antitrust laws, trade and transaction reporting obligations, and broadened fiduciary obligations.

Ongoing implementation of, our efforts to comply with, and/or changes to laws and regulations, including changes in the breadth, application, interpretation or enforcement of laws and regulations, could materially impact the profitability of our businesses and the value of assets we hold, expose us to additional theories of liability and additional costs, require changes to business practices or force us to discontinue businesses, adversely affect our ability to pay dividends and repurchase our stock or require us to raise capital, including in ways that may adversely impact our shareholders or creditors.

In addition, regulatory requirements that are imposed by foreign policymakers and regulators may be inconsistent or conflict with regulations that we are subject to in the U.S. and may adversely affect us. Legal and regulatory requirements continue to be subject to ongoing interpretation and change, which may result in significant new costs to comply with new or revised requirements, as well as to monitor for compliance on an ongoing basis.

The application of regulatory requirements and strategies in the U.S. or other jurisdictions to facilitate the orderly resolution of large financial institutions may pose a greater risk of loss for our security holders and subject us to other restrictions.

We are required to submit once every two years to the Federal Reserve and the FDIC a resolution plan that describes our strategy for a rapid and orderly resolution under the U.S. Bankruptcy Code in the event of material financial distress or failure. If the Federal Reserve and the FDIC were to jointly determine that our resolution plan submission was not credible or would not facilitate an orderly resolution, and if

we were unsuccessful in addressing any deficiencies identified by the regulators, we or any of our subsidiaries may be subject to more stringent capital, leverage, or liquidity requirements or restrictions on our growth, activities or operations, or after a two-year period, we may be required to divest assets or operations.

In addition, provided that certain procedures are met, we can be subject to a resolution proceeding under the orderly liquidation authority under Title II of the Dodd-Frank Act with the FDIC being appointed as receiver instead of being resolved under the U.S. Bankruptcy Code. The FDIC's power under the orderly liquidation authority to disregard the priority of creditor claims and treat similarly situated creditors differently in certain circumstances, subject to certain limitations, could adversely impact holders of our unsecured debt. See "Business—Supervision and Regulation" and "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Regulatory Requirements."

Further, because both our resolution plan contemplates an SPOE strategy under the U.S. Bankruptcy Code and the FDIC has proposed an SPOE strategy through which it may apply its orderly liquidation authority powers, we believe that the application of an SPOE strategy is the reasonably likely outcome if either our resolution plan were implemented or a resolution proceeding were commenced under the orderly liquidation authority. An SPOE strategy generally contemplates the provision of adequate capital and liquidity by the Parent Company to certain of its subsidiaries so that such subsidiaries have the resources necessary to implement the resolution strategy, and the Parent Company has entered into a secured amended and restated support agreement with such entities, pursuant to which it would provide such capital and liquidity to such entities.

In addition, a wholly owned, direct subsidiary of the Parent Company, Morgan Stanley Holdings LLC ("Funding IHC"), serves as a resolution funding vehicle. The Parent Company has transferred, and has agreed to transfer on an ongoing basis, certain assets to the Funding IHC. In the event of a resolution scenario, the Parent Company would be obligated to contribute all of its material assets that can be contributed under the terms of the amended and restated support agreement (other than shares in subsidiaries of the Parent Company and certain other assets), to the Funding IHC. The Funding IHC would be obligated to provide capital and liquidity, as applicable, to certain supported subsidiaries, pursuant to the terms of the secured amended and restated support agreement.

The obligations of the Parent Company and of the Funding IHC, respectively, under the amended and restated support agreement are in most cases secured on a senior basis by the assets of the Parent Company (other than shares in subsidiaries of the Parent Company and certain other assets), and the assets of the Funding IHC, as applicable. As a result, claims of certain supported subsidiaries, including the Funding IHC, against the assets of the Parent Company with respect to such secured assets are effectively senior to unsecured obligations of the Parent Company.

Although an SPOE strategy, whether applied pursuant to our resolution plan or in a resolution proceeding under the orderly liquidation authority, is intended to result in better outcomes for creditors overall, there is no guarantee that the application of an SPOE strategy, including the provision of support to the Parent Company's supported subsidiaries pursuant to the secured amended and restated support agreement, will not result in greater losses for holders of our securities compared with a different resolution strategy for us.

Regulators have taken and proposed various actions to facilitate an SPOE strategy under the U.S. Bankruptcy Code, the orderly liquidation authority and other resolution regimes. For example, the Federal Reserve requires top-tier BHCs of U.S. G-SIBs, including the Firm, to maintain adequate TLAC, including equity and eligible long-term debt, in order to ensure that such institutions have enough loss-absorbing resources at the point of failure to be recapitalized through the conversion of debt to equity or otherwise by imposing losses on eligible TLAC where the SPOE strategy is used. The combined implication of the SPOE resolution strategy and the TLAC requirement is that our losses will be imposed on the holders of eligible long-term debt and other forms of eligible TLAC issued by the Parent Company before any losses are imposed on the creditors of our supported subsidiaries without requiring taxpayer or government financial support.

In addition, certain jurisdictions, including the U.K. and E.U. jurisdictions, have implemented, or are in the process of implementing, changes to resolution regimes to provide resolution authorities with the ability to recapitalize a failing entity organized in such jurisdiction by writing down certain unsecured liabilities or converting certain unsecured liabilities into equity. Such "bail-in" powers are intended to enable the recapitalization of a failing institution by allocating losses to its shareholders and unsecured creditors. This may increase the overall level of capital and liquidity required by us on a consolidated basis and may result in limitations on our ability to efficiently distribute capital and liquidity among our affiliated entities, including in times of stress. Non-U.S. regulators are also considering requirements that certain subsidiaries of large financial institutions maintain minimum amounts of TLAC that would pass losses up from the subsidiaries to the Parent Company and, ultimately, to security holders of the Parent Company in the event of failure.

We may be prevented from paying dividends or taking other capital actions because of regulatory constraints or revised regulatory capital requirements.

We are subject to comprehensive consolidated supervision, regulation and examination by the Federal Reserve, including with respect to regulatory capital requirements, stress testing and capital planning. We submit, on at least an annual basis, a capital plan to the Federal Reserve describing proposed

dividend payments to shareholders, proposed repurchases of our outstanding securities and other proposed capital actions that we intend to take. Our ability to take capital actions described in the capital plan is dependent on, among other factors, the results of supervisory stress tests conducted by the Federal Reserve and our compliance with regulatory capital requirements imposed by the Federal Reserve.

In addition, the Federal Reserve may change regulatory capital requirements to impose higher requirements that restrict our ability to take capital actions or may modify or impose other regulatory standards or restrictions that increase our operating expenses or constrain our ability to take capital actions. For additional information, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources" herein.

The financial services industry faces substantial litigation and is subject to extensive regulatory and law enforcement investigations, and we may face damage to our reputation and legal liability.

As a global financial services firm, we face the risk of investigations and proceedings by governmental and self-regulatory organizations in all countries in which we conduct our business. Investigations and proceedings initiated by these authorities may result in adverse judgments, settlements, fines, penalties, injunctions or other relief. In addition to the monetary consequences, these measures could cause collateral consequences. For example, such matters could impact our ability to engage in, or impose limitations on, certain of our businesses.

These investigations and proceedings, as well as the amount of penalties and fines sought, continue to impact the financial services industry, and certain U.S. and international governmental entities have brought criminal actions against, or have sought criminal convictions, pleas or deferred prosecution agreements from, financial institutions. Significant regulatory or law enforcement action against us could materially adversely affect our business, financial condition or results of operations or cause us significant reputational harm, which could seriously harm our business.

The Dodd-Frank Act also provides compensation to whistleblowers who present the SEC or CFTC with information related to securities or commodities law violations that leads to a successful enforcement action. As a result of this compensation, it is possible we could face an increased number of investigations by the SEC or CFTC.

We have been named, from time to time, as a defendant in various legal actions, including arbitrations, class actions and other litigation, as well as investigations or proceedings brought by regulatory agencies, arising in connection with our activities as a global diversified financial services institution. Certain of the actual or threatened legal or regulatory actions include claims for substantial compensatory and/or punitive damages, claims for indeterminate amounts of damages, or may result in material penalties, fines, or other results adverse to us.

In some cases, the issuers that would otherwise be the primary defendants in such cases are bankrupt or are in financial distress. In other cases, including antitrust litigation, we may be subject to claims for joint and several liability with other defendants for treble damages or other relief related to alleged conspiracies involving other institutions. Like any large corporation, we are also subject to risk from potential employee misconduct, including non-compliance with policies, laws, rules and regulations, and improper use or disclosure of confidential information, or improper sales practices or other conduct.

We may be responsible for representations and warranties associated with commercial and residential real estate loans and may incur losses in excess of our reserves.

We originate loans secured by commercial and residential properties. Further, we securitize and trade in a wide range of commercial and residential real estate and real estate-related assets and products. In connection with these activities, we have provided, or otherwise agreed to be responsible for, certain representations and warranties. Under certain circumstances, we may be required to repurchase such assets or make other payments related to such assets if such representations and warranties were breached, and may incur losses as a result. We have also made representations and warranties in connection with our role as an originator of certain loans that we securitized in CMBS and RMBS. For additional information, see Note 15 to the financial statements.

A failure to address conflicts of interest appropriately could adversely affect our businesses and reputation.

As a global financial services firm that provides products and services to a large and diversified group of clients, including corporations, governments, financial institutions and individuals, we face potential conflicts of interest in the normal course of business. For example, potential conflicts can occur when there is a divergence of interests between us and a client, among clients, between an employee on the one hand and us or a client on the other, or situations in which we may be a creditor of a client. Moreover, we utilize multiple brands and business channels, including those resulting from our acquisitions, and continue to enhance the collaboration across business segments, which may heighten the potential conflicts of interest or the risk of improper sharing of information.

We have policies, procedures and controls that are designed to identify and address potential conflicts of interest, and we utilize various measures, such as the use of disclosure, to manage these potential conflicts. However, identifying and mitigating potential conflicts of interest can be complex and challenging and can become the focus of media and regulatory scrutiny. Indeed, actions that merely appear to

create a conflict can put our reputation at risk even if the likelihood of an actual conflict has been mitigated. It is possible that potential conflicts could give rise to litigation or enforcement actions, which may lead to our clients being less willing to enter into transactions in which a conflict may occur and could adversely affect our businesses and reputation.

Our regulators also have the ability to scrutinize our activities for potential conflicts of interest, including through detailed examinations of specific transactions. For example, our status as a BHC supervised by the Federal Reserve subjects us to direct Federal Reserve scrutiny with respect to transactions between our U.S. Bank Subsidiaries and their affiliates. Further, the Volcker Rule subjects us to regulatory scrutiny regarding certain transactions between us and our clients.

Risk Management

Our risk management strategies, models and processes may not be fully effective in mitigating our risk exposures in all market environments or against all types of risk, which could result in unexpected losses.

We have devoted significant resources to develop our risk management capabilities and expect to continue to do so in the future. Nonetheless, our risk management strategies, models and processes, including our use of various risk models for assessing market, credit, liquidity and operational exposures and hedging strategies, stress testing and other analysis, may not be fully effective in mitigating our risk exposure in all market environments or against all types of risk, including risks that are unidentified or unanticipated.

As our businesses change and grow, including through acquisitions, and the markets in which we operate evolve, our risk management strategies, models and processes may not always adapt with those changes. Some of our methods of managing risk are based upon our use of observed historical market behavior and management's judgment. As a result, these methods may not predict future risk exposures, which could be significantly greater than the historical measures indicate.

In addition, many models we use are based on assumptions or inputs regarding correlations among prices of various asset classes or other market indicators and, therefore, cannot anticipate sudden, unanticipated, or unidentified market or economic movements, such as the impact of a pandemic or a sudden geopolitical conflict, which could cause us to incur losses.

Management of market, credit, liquidity, operational, model, legal, regulatory and compliance risks requires, among other things, policies and procedures to record properly and verify a large number of transactions and events, and these policies and procedures may not be fully effective. Our trading risk management strategies and techniques also seek to balance our ability to profit from trading positions with our exposure to potential losses.

While we employ a broad and diversified set of risk monitoring and risk mitigation techniques, those techniques and the judgments that accompany their application cannot anticipate every economic and financial outcome or the timing of such outcomes. For example, to the extent that our trading or investing activities involve less liquid trading markets or are otherwise subject to restrictions on sales or hedging, we may not be able to reduce our positions and, therefore, reduce our risk associated with such positions. We may, therefore, incur losses in the course of our trading or investing activities. For more information on how we monitor and manage market and certain other risks and related strategies, models and processes, see "Quantitative and Qualitative Disclosures about Risk—Market Risk."

Climate change manifesting as physical or transition risks could result in increased costs and risks and adversely affect our operations, businesses and clients.

There continues to be increasing concern over the risks of climate change and related environmental sustainability matters. The physical risks of climate change include harm to people and property arising from acute, climate-related events, such as floods, hurricanes, heatwaves, wildfires, and chronic, longer-term shifts in climate patterns, such as higher global average temperatures, rising sea levels, and droughts. Such events could disrupt our operations or those of our clients or third-parties on which we rely, including through direct damage to physical assets and indirect impacts from supply chain disruption and market volatility. Over the longer term, these events could impact the ability of certain of our clients or customers to repay their obligations, reduce the value of collateral, limit insurance coverage and result in other effects.

Additionally, transitioning to a low-carbon economy will likely require extensive policy, legal, technology and market changes. Transition risks, including changes in consumer and business sentiment, related technologies, shareholder preferences, and any additional regulatory and legislative requirements, including carbon taxes, could increase our expenses and adversely impact our strategies, including by limiting our ability to pursue certain business activities or offer certain products and services. Over the longer term, negative impacts to certain of our clients, such as decreased profitability and stranded assets, could also lead to increased credit and counterparty risk to us.

In addition, our reputation and client relationships may be adversely impacted as a result of our practices related to climate change, including our involvement, or our clients' involvement, in certain industries, projects, or initiatives associated with causing, or potentially slowing solutions to, climate change, as well as any decisions we make to continue to conduct or change our activities in response to considerations relating to climate change. Legislative or

regulatory uncertainties and change regarding climate-related risks, including inconsistent perspectives or requirements, are likely to result in higher regulatory, compliance, credit, reputational and other risks and costs.

Our ability to achieve our long-term climate-related goals and commitments could also result in reputational harm as a result of public sentiment, regulatory scrutiny, litigation and reduced investor and stakeholder confidence. If we are unable to achieve our objectives relating to climate change or our current response to climate change is perceived to be ineffective or insufficient, our business and reputation may suffer.

The risks associated with, and the perspective of regulators, governments, shareholders, employees and other stakeholders regarding, climate change are continuing to evolve rapidly, which can make it difficult to assess the ultimate impact on us of climate change-related risks and uncertainties. As climate risk is interconnected with other risk types, including geopolitical risks, we have developed and continue to enhance processes to embed climate risk considerations into our risk management strategies for risks such as market, credit and operational risks, as well as our governance structures. Despite our risk management strategies, the unpredictability surrounding the timing and severity of climate change events and societal or political changes in reaction to them make it difficult to predict, identify, monitor and effectively mitigate climate risk exposure.

In addition, the methodologies and data used to manage and monitor climate risk are still in early stages and continue to evolve. Current approaches utilize information and estimates that have been derived from information or factors released by third-party sources, which may not reflect the latest or most accurate data. Climate-related data, particularly greenhouse gas emissions for clients and counterparties, remains limited in availability and variable in quality. Certain third-party information may also change over time as methodologies evolve and are refined. While we believe this information is the best available at the time, we may only be able to complete limited validation. Furthermore, modeling capabilities and methodologies to analyze climate-related risks, although improving, remain nascent and emerging. These and other factors could cause results to differ materially from those expressed in the estimates and beliefs made by third-parties and by us, which could also impact our management of risk in this area.

Replacement of London Interbank Offered Rate and replacement or reform of other interest rate benchmarks could adversely affect our business, financial condition and results of operations.

Central banks around the world, including the Federal Reserve, have sponsored initiatives in recent years to replace LIBOR and replace or reform certain other interest rate benchmarks (collectively, the "IBORs"). A transition away from use of the IBORs to alternative rates and other potential interest rate benchmark reforms is underway and is a multi-year initiative. These reforms have caused and may in the future cause such rates to perform differently than in the past, or to cease entirely, or have other consequences that are contrary to market expectations.

The ongoing market transition away from IBORs and other interest rate benchmarks to alternative reference rates is complex and could have a range of adverse impacts on our business, financial condition and results of operations. In particular, such transition or reform could:

- Adversely impact the pricing, liquidity, value of, return on and trading for a broad array of financial products, including any IBOR-linked securities, loans and derivatives that are included in our financial assets and liabilities;
- Require further extensive changes to documentation that governs or references IBOR or IBOR-based products, including, for example, pursuant to time-consuming renegotiations of existing documentation to modify the terms of outstanding securities and related hedging transactions;
- Result in a population of products with documentation that governs or references IBOR or IBOR-based products but that cannot be amended due to an inability to obtain sufficient consent from counterparties or product owners;
- Result in inquiries, reviews or other actions from regulators in respect of our (or the market's) preparation, readiness, transition plans and actions regarding the replacement of an IBOR with one or more alternative reference rates, including regulatory guidance regarding constraints on the entry into new U.S. dollar IBOR-linked contracts after December 31, 2021;
- Result in disputes, litigation or other actions with clients, counterparties and investors in various scenarios, such as regarding the interpretation and enforceability of provisions in IBOR-based products such as fallback language or other related provisions, including in the case of fallbacks to the alternative reference rates, any economic, legal, operational or other impact resulting from the fundamental differences between the IBORs and the various alternative reference rates;
- Require the additional transition and/or further development of appropriate systems and analytics to effectively transition our risk management processes from IBORs to those based on one or more alternative reference rates in a timely manner, including by quantifying value and risk for various alternative reference rates, which may prove challenging given the limited history of the proposed alternative reference rates; and
- Cause us to incur additional costs in relation to any of the above factors.

Other factors include the pace of the transition to the alternative reference rates, timing mismatches between cash and derivative markets, the specific terms and parameters for and market acceptance of any alternative reference rate, market conventions for the use of any alternative reference rate in connection with a particular product (including the

timing and market adoption of any conventions proposed or recommended by any industry or other group), prices of and the liquidity of trading markets for products based on alternative reference rates, and our ability to further transition and develop appropriate systems and analytics for one or more alternative reference rates.

See also “Management's Discussion and Analysis of Financial Condition and Results of Operations—Regulatory Requirements—Regulatory Developments and Other Matters” herein.

Competitive Environment

We face strong competition from financial services firms and others, which could lead to pricing pressures that could materially adversely affect our revenues and profitability.

The financial services industry and all aspects of our businesses are intensely competitive, and we expect them to remain so. We compete with commercial banks, investment banking firms, brokerage firms, insurance companies, exchanges, electronic trading and clearing platforms, financial data repositories, sponsors of mutual funds, hedge funds, real assets funds and private credit and equity funds, energy companies, financial technology firms and other companies offering financial or ancillary services in the U.S. and globally, including through the internet. We also compete with companies that provide online trading and banking services, investment advisor services, robo-advice capabilities, access to digital asset capabilities and services, and other financial products and services. We compete on the basis of several factors, including transaction execution, capital or access to capital, products and services, innovation, technology, reputation, risk appetite and price.

Over time, certain sectors of the financial services industry have become more concentrated, as institutions involved in a broad range of financial services have left businesses, been acquired by or merged into other firms, or have declared bankruptcy. Such changes could result in our remaining competitors gaining greater capital and other resources, such as the ability to offer a broader range of products and services and geographic diversity, or new competitors may emerge.

We have experienced and may continue to experience pricing pressures as a result of these factors and as some of our competitors seek to obtain market share by reducing prices, eliminating commissions or other fees, or providing more favorable terms of business. In addition, certain of our competitors may be subject to different and, in some cases, less stringent, legal and regulatory regimes than we are, thereby putting us at a competitive disadvantage. Some new competitors in the financial technology sector have sought to target existing segments of our businesses that could be susceptible to disruption by innovative or less regulated business models. For more information regarding the competitive environment in which we operate, see “Business—Competition” and “Business—Supervision and Regulation.”

Automated trading markets and the introduction and application of new technologies may adversely affect our business and may increase competition.

We continue to experience price competition in some of our businesses. In particular, the ability to execute securities, derivatives and other financial instrument trades electronically on exchanges, swap execution facilities and other automated trading platforms, and the introduction and application of new technologies will likely continue the pressure on revenues. The trend toward direct access to automated, electronic markets will likely continue as additional markets move to more automated trading platforms. We have experienced and will likely continue to experience competitive pressures in these and other areas in the future.

Our ability to retain and attract qualified employees is critical to the success of our business and the failure to do so may materially adversely affect our performance.

Our people are our most important asset. We compete with various other companies in attracting and retaining qualified and skilled personnel. If we are unable to continue to attract, integrate and retain highly qualified employees, or do so at levels or in forms necessary to maintain our competitive position, or if compensation costs required to attract and retain employees become more expensive, or the competitive market for talent further intensifies, our performance, including our competitive position and results of operations, could be materially adversely affected.

The financial industry has experienced and may continue to experience more stringent regulation of employee compensation, including limitations relating to incentive-based compensation, clawback requirements and special taxation, which could have an adverse effect on our ability to hire or retain the most qualified employees.

International Risk

We are subject to numerous political, economic, legal, tax, operational, franchise and other risks as a result of our international operations that could adversely impact our businesses in many ways.

We are subject to numerous political, economic, legal, tax, operational, franchise and other risks that are inherent in operating in many countries, including risks of possible nationalization, expropriation, price controls, capital controls, exchange controls, increased taxes and levies, cybersecurity, data transfer and outsourcing restrictions, prohibitions on certain types of foreign and capital market activities, limitations on cross-border listings and other restrictive governmental actions, as well as the outbreak of hostilities or political and governmental instability, including tensions between China and the U.S. In many countries, the laws and

regulations applicable to the securities and financial services industries are uncertain, evolving and subject to sudden change or may be inconsistent with U.S. law. It may be also difficult for us to determine the exact requirements of local laws in every market or adapt to changes in law, which could adversely impact our businesses. Our inability to remain in compliance with local laws in a particular market could have a significant and negative effect not only on our business in that market but also on our reputation generally. We are also subject to the risk that transactions we structure might not be legally enforceable in all cases.

Various emerging market countries have experienced severe political, economic or financial disruptions, including significant devaluations of their currencies, defaults or potential defaults on sovereign debt, capital and currency exchange controls, high rates of inflation and low or negative growth rates in their economies. Crime and corruption, as well as issues of security and personal safety, also exist in certain of these countries. These conditions could adversely impact our businesses and increase volatility in financial markets generally.

A disease pandemic, such as COVID-19 and its variants, or other widespread health emergencies, natural disasters, climate-related incidents, terrorist activities or military actions, such as the war between Russia and Ukraine, or social or political tensions, could create economic and financial disruptions in emerging markets or in other areas of the global economy that could adversely affect our businesses, or could lead to operational difficulties, including travel limitations, that could impair our ability to manage or conduct our businesses around the world.

As a U.S. company, we are required to comply with the economic sanctions and embargo programs administered by OFAC and similar multinational bodies and governmental agencies worldwide, which may be inconsistent with local law. We are also subject to applicable AML and anti-corruption laws in the U.S., as well as in the jurisdictions in which we operate, including the Bank Secrecy Act, the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act. A violation of a sanction, embargo program, AML, or anti-corruption law could subject us, and individual employees, to a regulatory enforcement action, as well as significant civil and criminal penalties.

Acquisition, Divestiture and Joint Venture Risk

We may be unable to fully capture the expected value from acquisitions, divestitures, joint ventures, partnerships, minority stakes or strategic alliances, and certain acquisitions may subject our business to new or increased risk.

In connection with past or future acquisitions, divestitures, joint ventures, partnerships, minority stakes or strategic alliances (including with MUFG), we face numerous risks and uncertainties in combining, transferring, separating or integrating the relevant businesses and systems that may present operational and other risks, including the need to combine or separate accounting, data processing and other systems, management controls and legal entities, and to integrate relationships with clients, trading counterparties and business partners. Certain of these strategic initiatives, and integration thereof, may cause us to incur incremental expenses and may also require incremental financial, management and other resources.

In the case of joint ventures, partnerships and minority stakes, we are subject to additional risks and uncertainties because we may be dependent upon, and subject to liability, losses or reputational damage relating to systems, controls and personnel that are not under our control and conflicts or disagreements between us and any of our joint venture partners or partners may negatively impact the benefits to be achieved by the relevant joint venture or partnership, respectively.

For example, the integrations of E*TRADE and Eaton Vance involve a number of risks, including failure to realize anticipated cost savings and difficulty integrating the businesses. It is possible that the remaining integration processes could also result in unanticipated disruptions of ongoing businesses, the loss of key employees, the loss of clients, or overall integrations that take longer than originally anticipated.

There is no assurance that any of our acquisitions, divestitures or investments will be successfully integrated or disaggregated or yield all of the positive benefits and synergies anticipated. If we are not able to integrate or disaggregate successfully our past and future acquisitions or dispositions, including aligning the processes, policies and procedures of the acquired entities with our standards, there is a risk that our results of operations, financial condition and cash flows may be materially and adversely affected.

Certain of our business initiatives, including expansions of existing businesses, may change our client or account profile or bring us into contact, directly or indirectly, with individuals and entities that are not within our traditional client and counterparty base and may expose us to new asset classes, services, competitors and new markets. These business activities expose us to new and enhanced risks, greater regulatory scrutiny of these activities, increased credit-related, sovereign, compliance and operational risks, as well as franchise and reputational concerns regarding the manner in which these assets are being operated or held, or services are being delivered.

For more information regarding the regulatory environment in which we operate, see also “Business—Supervision and Regulation.”

Management's Discussion and Analysis of Financial Condition and Results of Operations

Introduction

Morgan Stanley is a global financial services firm that maintains significant market positions in each of its business segments—Institutional Securities, Wealth Management and Investment Management. Morgan Stanley, through its subsidiaries and affiliates, provides a wide variety of products and services to a large and diversified group of clients and customers, including corporations, governments, financial institutions and individuals. Unless the context otherwise requires, the terms "Morgan Stanley," "Firm," "us," "we" or "our" mean Morgan Stanley (the "Parent Company") together with its consolidated subsidiaries. Disclosures reflect the effects of the acquisitions of Eaton Vance Corp. ("Eaton Vance") and E*TRADE Financial Corporation ("E*TRADE") prospectively from the acquisition dates, March 1, 2021 and October 2, 2020, respectively. See the "Glossary of Common Terms and Acronyms" for the definition of certain terms and acronyms used throughout this Form 10-K. For an analysis of 2021 results compared with 2020 results, see Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the annual report on Form 10-K for the year-ended December 31, 2021 filed with the SEC.

A description of the clients and principal products and services of each of our business segments is as follows:

Institutional Securities provides a variety of products and services to corporations, governments, financial institutions and ultra-high net worth clients. Investment Banking services consist of capital raising and financial advisory services, including the underwriting of debt, equity and other securities, as well as advice on mergers and acquisitions, restructurings and project finance. Our Equity and Fixed Income businesses include sales, financing, prime brokerage, market-making, Asia wealth management services and certain business-related investments. Lending activities include originating corporate loans and commercial real estate loans, providing secured lending facilities, and extending securities-based and other financing to customers. Other activities include research.

Wealth Management provides a comprehensive array of financial services and solutions to individual investors and small to medium-sized businesses and institutions covering: financial advisor-led brokerage, custody, administrative and investment advisory services; self-directed brokerage services; financial and wealth planning services; workplace services, including stock plan administration; securities-based lending, residential real estate loans and other lending products; banking; and retirement plan services.

Investment Management provides a broad range of investment strategies and products that span geographies, asset classes, and public and private markets to a diverse group of clients across institutional and intermediary channels. Strategies and products, which are offered through a variety of investment vehicles, include equity, fixed income, alternatives and solutions, and liquidity and overlay services. Institutional clients include defined benefit/defined contribution plans, foundations, endowments, government entities, sovereign wealth funds, insurance companies, third-party fund sponsors and corporations. Individual clients are generally served through intermediaries, including affiliated and non-affiliated distributors.

Management's Discussion and Analysis includes certain metrics that we believe to be useful to us, investors, analysts and other stakeholders by providing further transparency about, or an additional means of assessing, our financial condition and operating results. Such metrics, when used, are defined and may be different from or inconsistent with metrics used by other companies.

The results of operations in the past have been, and in the future may continue to be, materially affected by: competition; risk factors; legislative, legal and regulatory developments; and other factors. These factors also may have an adverse impact on our ability to achieve our strategic objectives. Additionally, the discussion of our results of operations herein may contain forward-looking statements. These statements, which reflect management's beliefs and expectations, are subject to risks and uncertainties that may cause actual results to differ materially. For a discussion of the risks and uncertainties that may affect our future results, see "Forward-Looking Statements," "Business—Competition," "Business—Supervision and Regulation," "Risk Factors" and "Liquidity and Capital Resources—Regulatory Requirements" herein.

Executive Summary

Overview of Financial Results

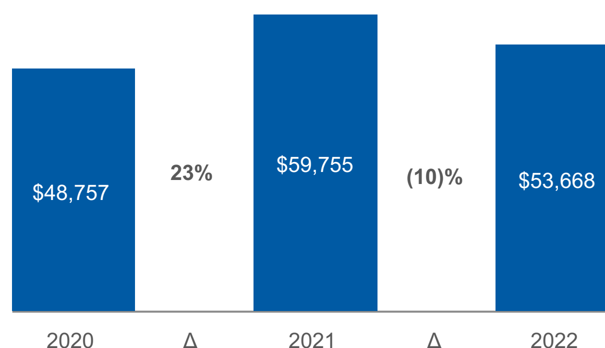
Consolidated Results—Full Year ended December 31, 2022

- The Firm reported net revenues of $53.7 billion and net income of $11.0 billion as our businesses navigated a challenging market environment.
- The Firm delivered ROTCE of 15.3%, or 15.7% excluding the impact of integration-related expenses (see "Selected Non-GAAP Financial Information" herein).
- The Firm expense efficiency ratio was 73%, or 72% excluding the impact of integration-related expenses (see "Selected Non-GAAP Financial Information" herein).
- At December 31, 2022, the Firm's Standardized Common Equity Tier 1 capital ratio was 15.3%.
- Institutional Securities reported net revenues of $24.4 billion reflecting lower activity in Investment Banking driven by the uncertain macroeconomic environment, partially offset by strong performance in Fixed Income.
- Wealth Management delivered net revenues of $24.4 billion and a pre-tax margin of 27.0% or 28.4% excluding integration-related expenses (see "Selected Non-GAAP Financial Information" herein). The business added net new assets of $311 billion, representing a full year 6% annualized growth rate from beginning period assets.
- Investment Management reported net revenues of $5.4 billion and AUM of $1.3 trillion in a challenging market environment.

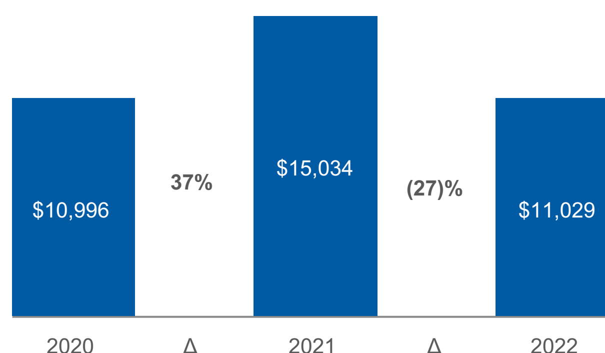
Strategic Transactions

- On March 1, 2021, we completed the acquisition of Eaton Vance. For further information, see "Business Segments—Investment Management" herein and Note 3 to the financial statements.
- On October 2, 2020, we completed the acquisition of E*TRADE. For further information, see "Business Segments—Wealth Management" herein and Note 3 to the financial statements.

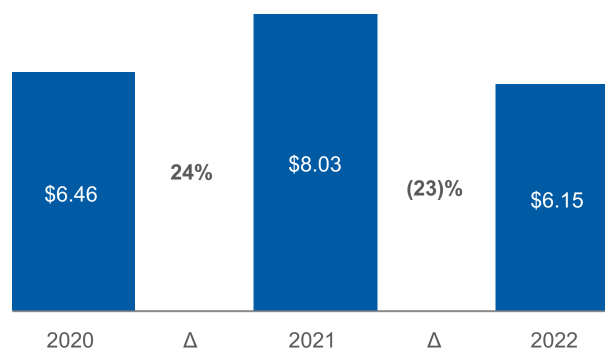
Net Revenues
($ in millions)



Net Income Applicable to Morgan Stanley
($ in millions)



Earnings per Diluted Common Share[1]

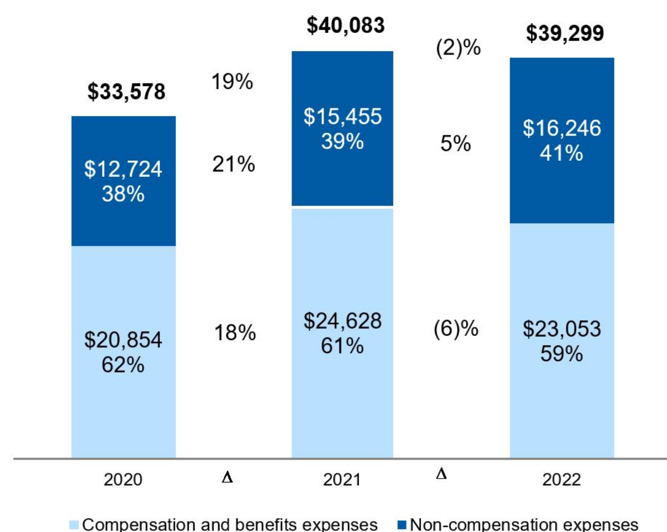


1. Adjusted Diluted EPS was $6.36, $8.22 and $6.58 in 2022, 2021 and 2020, respectively (see "Selected Non-GAAP Financial Information" herein).

2022 Compared with 2021

- We reported net revenues of $53.7 billion in 2022 compared with $59.8 billion in 2021. For 2022, net income applicable to Morgan Stanley was $11.0 billion, or $6.15 per diluted common share, compared with $15.0 billion, or $8.03 per diluted common share in 2021.

Non-interest Expenses[1]
($ in millions)



1. The percentages on the bars in the chart represent the contribution of compensation and benefits expenses and non-compensation expenses to the total.

- Compensation and benefits expenses of $23,053 million in 2022 decreased 6% from the prior year, primarily due to lower expenses related to certain deferred cash-based compensation plans linked to investment performance, lower discretionary incentive compensation on lower revenues, and lower stock-based compensation expense driven by the Firm's share price, partially offset by higher salary expenses driven in part by the impact of higher headcount.

  2022 Compensation and benefits expenses included $133 million associated with a December employee action recorded in the fourth quarter of 2022.

- Non-compensation expenses of $16,246 million in 2022 increased 5% from the prior year, primarily due to an increased spend on technology and higher legal expenses, including $200 million related to a regulatory matter in the second quarter of 2022.

Provision for Credit Losses

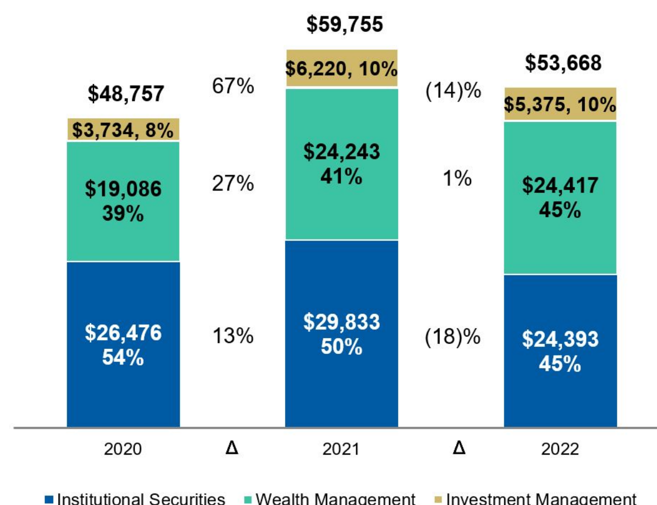
The Provision for credit losses on loans and lending commitments of $280 million in 2022 was due to portfolio growth and deterioration in macroeconomic outlook. The Provision for credit losses on loans and lending commitments of $4 million in 2021 was primarily as a result of portfolio growth offset by the impact of changes in loan quality mix.

Income Taxes

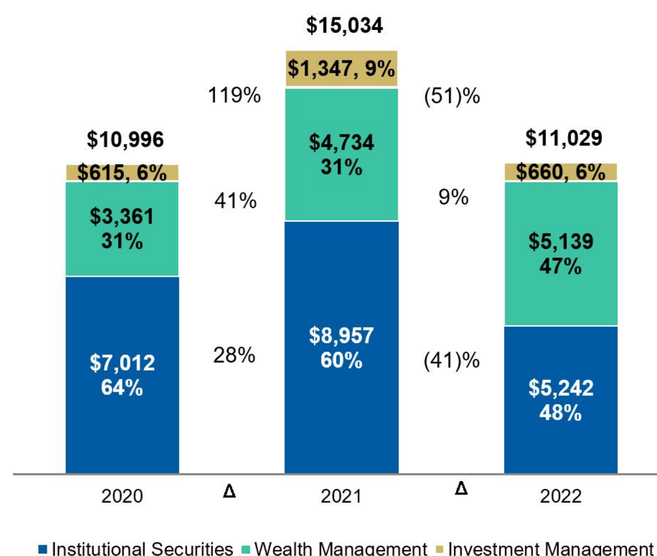
The Firm's effective tax rate of 20.7% for 2022 was lower compared with the prior year, primarily driven by the realization of certain tax benefits.

Business Segment Results

Net Revenues by Segment[1]
($ in millions)



Net Income Applicable to Morgan Stanley by Segment[1]
($ in millions)



1. The percentages on the bars in the charts represent the contribution of each business segment to the total of the applicable financial category and may not sum to 100% due to intersegment eliminations. See Note 23 to the financial statements for details of intersegment eliminations.

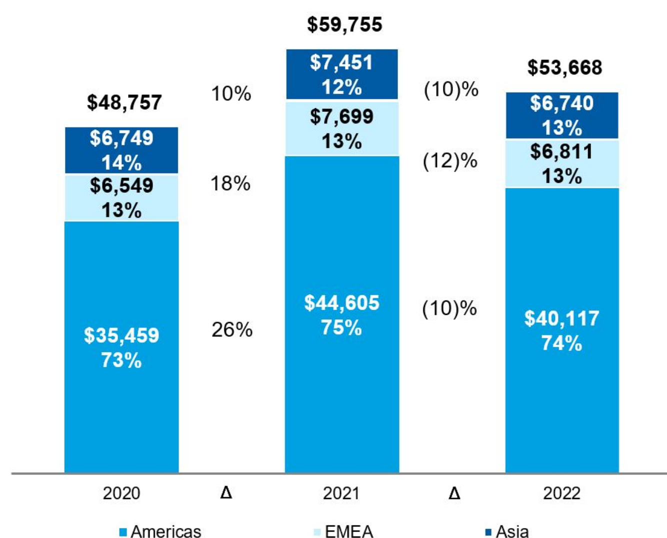
- Institutional Securities net revenues of $24,393 million in 2022 decreased 18% from the prior year, primarily reflecting lower results from Investment banking, particularly equity underwriting, and losses in Other net revenues primarily from higher mark-to-market losses on corporate loans held for sale inclusive of hedges, partially offset by higher Fixed income results, particularly in global macro products.

- Wealth Management net revenues of $24,417 million in 2022 increased 1% from the prior year, as higher Net interest revenues were offset by lower Transactional revenues, primarily driven by losses on investments associated with certain employee deferred cash-based compensation plans.

- Investment Management net revenues of $5,375 million in 2022 decreased 14% from the prior year, reflecting lower Performance-based income and other revenues and lower Asset management and related fees.

Net Revenues by Region[1, 2]

($ in millions)



1. The percentages on the bars in the charts represent the contribution of each region to the total.
2. For a discussion of how the geographic breakdown of net revenues is determined, see Note 23 to the financial statements.

Americas net revenues in the current year period decreased 10%, driven by results within the Institutional Securities business segment, with lower Investment banking and Other net revenues, partially offset by higher results from Fixed income. EMEA net revenues decreased 12%, primarily driven by Investment banking results within the Institutional Securities business segment. Asia net revenues decreased 10%, primarily driven by results within the Institutional Securities business segment, with lower results in Investment banking and Equity, partially offset by higher results from Fixed income.

Selected Financial Information and Other Statistical Data

$ in millions, except per share data	2022	2021	2020
Consolidated results			
Net revenues	**$ 53,668**	$ 59,755	$ 48,757
Earnings applicable to Morgan Stanley common shareholders	**$ 10,540**	$ 14,566	$ 10,500
Earnings per diluted common share	**$ 6.15**	$ 8.03	$ 6.46
Consolidated financial measures			
Expense efficiency ratio[1]	**73 %**	67 %	69 %
Adjusted expense efficiency ratio[1,2]	**72 %**	66 %	68 %
ROE[3]	**11.2 %**	15.0 %	13.1 %
Adjusted ROE[2,3]	**11.6 %**	15.3 %	13.3 %
ROTCE[2,3]	**15.3 %**	19.8 %	15.2 %
Adjusted ROTCE[2,3]	**15.7 %**	20.2 %	15.4 %
Pre-tax margin[4]	**26 %**	33 %	30 %
Effective tax rate	**20.7 %**	23.1 %	22.5 %
Pre-tax margin by segment[4]			
Institutional Securities	**28 %**	40 %	35 %
Wealth Management	**27 %**	25 %	23 %
Wealth Management, adjusted[2]	**28 %**	27 %	24 %
Investment Management	**15 %**	27 %	23 %
Investment Management, adjusted[2]	**17 %**	29 %	23 %

in millions, except per share data, worldwide employees and client assets	**At December 31, 2022**	At December 31, 2021
Average liquidity resources for three months ended[5]	**$ 312,250**	$ 345,049
Loans[6]	**$ 222,182**	$ 200,761
Total assets	**$ 1,180,231**	$ 1,188,140
Deposits	**$ 356,646**	$ 347,574
Borrowings	**$ 238,058**	$ 233,127
Common shareholders' equity	**$ 91,391**	$ 97,691
Tangible common shareholders' equity[3]	**$ 67,123**	$ 72,499
Common shares outstanding	**1,675**	1,772
Book value per common share[7]	**$ 54.55**	$ 55.12
Tangible book value per common share[3,7]	**$ 40.06**	$ 40.91
Worldwide employees (in thousands)	**82**	75
Client assets[8] (in billions)	**$ 5,492**	$ 6,554
Capital ratios[9]		
Common Equity Tier 1 capital—Standardized	**15.3 %**	16.0 %
Tier 1 capital—Standardized	**17.2 %**	17.7 %
Common Equity Tier 1 capital—Advanced	**15.6 %**	17.4 %
Tier 1 capital—Advanced	**17.6 %**	19.1 %
Tier 1 leverage	**6.7 %**	7.1 %
SLR	**5.5 %**	5.6 %

1. The expense efficiency ratio represents total non-interest expenses as a percentage of net revenues.
2. Represents a non-GAAP financial measure. See "Selected Non-GAAP Financial Information" herein.
3. ROE and ROTCE represent earnings applicable to Morgan Stanley common shareholders as a percentage of average common equity and average tangible common equity, respectively.
4. Pre-tax margin represents income before provision for income taxes as a percentage of net revenues.
5. For a discussion of Liquidity resources, see "Liquidity and Capital Resources—Balance Sheet—Liquidity Risk Management Framework—Liquidity Resources" herein.
6. Includes loans held for investment, net of ACL, loans held for sale and also includes loans at fair value, which are included in Trading assets in the balance sheet.
7. Book value per common share and tangible book value per common share equal common shareholders' equity and tangible common shareholders' equity, respectively, divided by common shares outstanding.
8. Client assets represents Wealth Management client assets and Investment Management AUM. Certain Wealth Management client assets are invested in Investment Management products and are also included in Investment Management's AUM. The prior period has been revised to conform to the current period presentation. See "Business Segments—Wealth Management" herein for additional information.
9. For a discussion of our capital ratios, see "Liquidity and Capital Resources—Regulatory Requirements" herein.

Russia and Ukraine War

We continue to monitor the war in Ukraine and its impact on both the Ukrainian and Russian economies, as well as related impacts on other world economies and the financial markets. Our direct exposure to both Russia and Ukraine remains limited. We are not entering any new business onshore in Russia and our activities in Russia are limited to helping global clients address and close out pre-existing obligations.

Refer to "Risk Factors" and "Forward-Looking Statements" for more information on the potential effects of geopolitical events and acts of war or aggression.

Selected Non-GAAP Financial Information

We prepare our financial statements using U.S. GAAP. From time to time, we may disclose certain "non-GAAP financial measures" in this document or in the course of our earnings releases, earnings and other conference calls, financial presentations, definitive proxy statement and otherwise. A "non-GAAP financial measure" excludes, or includes, amounts from the most directly comparable measure calculated and presented in accordance with U.S. GAAP. We consider the non-GAAP financial measures we disclose to be useful to us, investors, analysts and other stakeholders by providing further transparency about, or an alternate means of assessing or comparing our financial condition, operating results and capital adequacy.

These measures are not in accordance with, or a substitute for, U.S. GAAP and may be different from or inconsistent with non-GAAP financial measures used by other companies. Whenever we refer to a non-GAAP financial measure, we will also generally define it or present the most directly comparable financial measure calculated and presented in accordance with U.S. GAAP, along with a reconciliation of the differences between the U.S. GAAP financial measure and the non-GAAP financial measure.

In the fourth quarter of 2022, we introduced new non-GAAP financial measures. These measures exclude the impact of mark-to-market gains and losses on investments associated with certain employee deferred cash-based compensation plans from net revenues and compensation expenses. These employee deferred cash-based compensation plans are primarily reflected in our Wealth Management business segment. We consider these new measures useful for analysts, investors, and other stakeholders to allow better comparability of period-to-period underlying operating performance and revenue trends, especially in our Wealth Management business segment. By excluding the impact of these items we are better able to describe the business drivers and resulting impact to net revenues and corresponding change to the associated compensation expenses.

Compensation expense for deferred cash-based compensation awards is calculated based on the notional value of the award granted, adjusted for changes in the fair value of the referenced investments that employees select. Compensation expense is recognized over the vesting period relevant to each separately vesting portion of deferred awards.

We invest directly, as a principal, in financial instruments and other investments to economically hedge certain of our obligations under these deferred cash-based compensation plans. Changes in the fair value of such investments, net of financing costs, are recorded in Net revenues, and included in Transactional revenues in the Wealth Management business segment. Although changes in compensation expense resulting from changes in the fair value of the referenced investments will generally be offset by changes in the fair value of investments recognized in net revenues, there is typically a timing difference between the immediate recognition of gains and losses on our investments and the deferred recognition of the related compensation expense over the vesting period. While this timing difference may not be material to our Income before provision for income taxes in any individual period, it may impact the Wealth Management business segment reported ratios and operating metrics in certain periods due to potentially significant impacts to net revenues and compensation expenses. For additional information on deferred cash-based compensation, refer to "Other Matters" herein.

The principal non-GAAP financial measures presented in this document are set forth in the following tables.

Reconciliations from U.S. GAAP to Non-GAAP Consolidated Financial Measures

$ in millions, except per share data	2022	2021	2020
Net revenues	**$53,668**	$59,755	$48,757
Adjustment for mark-to-market losses (gains) on certain employee deferred cash-based compensation plans[1]	**1,198**	(389)	(823)
Adjusted Net revenues—non-GAAP	**$54,866**	$59,366	$47,934
Compensation expense	**$23,053**	$24,628	$20,854
Adjustment for mark-to-market gains (losses) on certain employee deferred cash-based compensation plans[1]	**716**	(526)	(856)
Adjusted Compensation expense—non-GAAP	**$23,769**	$24,102	$19,998
Wealth Management Net revenues	**$24,417**	$24,243	$19,086
Adjustment for mark-to-market losses (gains) on certain employee deferred cash-based compensation plans[1]	**858**	(210)	(563)
Adjusted Wealth Management Net revenues—non-GAAP	**$25,275**	$24,033	$18,523
Wealth Management Compensation expense	**$12,534**	$13,090	$10,970
Adjustment for mark-to-market gains (losses) on certain employee deferred cash-based compensation plans[1]	**530**	(293)	(516)
Adjusted Wealth Management Compensation expense—non-GAAP	**$13,064**	$12,797	$10,454
Earnings applicable to Morgan Stanley common shareholders	**$10,540**	$14,566	$10,500
Impact of adjustments:			
Wealth Management—Compensation expenses	**12**	58	151
Wealth Management—Non-compensation expenses	**345**	288	80
Investment Management—Compensation expenses	**29**	44	—
Investment Management—Non-compensation expenses	**84**	66	—
Total integration-related expenses	**470**	456	231
Related tax benefit	**(110)**	(104)	(42)
Adjusted earnings applicable to Morgan Stanley common shareholders—non-GAAP[2]	**$10,900**	$14,918	$10,689
Earnings per diluted common share	**$ 6.15**	$ 8.03	$ 6.46
Impact of adjustments	**0.21**	0.19	0.12
Adjusted earnings per diluted common share—non-GAAP[2]	**$ 6.36**	$ 8.22	$ 6.58
Expense efficiency ratio	**73 %**	67 %	69 %
Impact of adjustments	**(1)%**	(1)%	(1)%
Adjusted expense efficiency ratio—non-GAAP[2]	**72 %**	66 %	68 %
Wealth Management pre-tax margin	**27 %**	25 %	23 %
Impact of adjustments	**1 %**	2 %	1 %
Adjusted Wealth Management pre-tax margin—non-GAAP[2]	**28 %**	27 %	24 %
Investment Management pre-tax margin	**15 %**	27 %	23 %
Impact of adjustments	**2 %**	2 %	— %
Adjusted Investment Management pre-tax margin—non-GAAP[2]	**17 %**	29 %	23 %

	At December 31,		
$ in millions	2022	2021	2020
Tangible equity			
Common shareholders' equity	**$ 91,391**	$ 97,691	$ 92,531
Less: Goodwill and net intangible assets	**(24,268)**	(25,192)	(16,615)
Tangible common shareholders' equity—non-GAAP	**$ 67,123**	$ 72,499	$ 75,916

	Average Monthly Balance		
$ in millions	2022	2021	2020
Tangible equity			
Common shareholders' equity	**$ 93,873**	$ 97,094	$ 80,246
Less: Goodwill and net intangible assets	**(24,789)**	(23,392)	(10,951)
Tangible common shareholders' equity—non-GAAP	**$ 69,084**	$ 73,702	$ 69,295

$ in billions	2022	2021	2020
Average common equity			
Unadjusted—GAAP	**$ 93.9**	$ 97.1	$ 80.2
Adjusted[2]—Non-GAAP	**94.0**	97.2	80.3
ROE[3]			
Unadjusted—GAAP	**11.2 %**	15.0 %	13.1 %
Adjusted[2]—Non-GAAP	**11.6 %**	15.3 %	13.3 %
Average tangible common equity—Non-GAAP			
Unadjusted	**$ 69.1**	$ 73.7	$ 69.3
Adjusted[2]	**69.3**	73.8	69.3
ROTCE[3]—Non-GAAP			
Unadjusted	**15.3 %**	19.8 %	15.2 %
Adjusted[2]	**15.7 %**	20.2 %	15.4 %

Non-GAAP Financial Measures by Business Segment

$ in billions	2022	2021	2020
Average common equity[4]			
Institutional Securities	**$ 48.8**	$ 43.5	$ 42.8
Wealth Management	**31.0**	28.6	20.8
Investment Management	**10.6**	8.8	2.6
ROE[5]			
Institutional Securities	**10 %**	20 %	15 %
Wealth Management	**16 %**	16 %	16 %
Investment Management	**6 %**	15 %	23 %
Average tangible common equity[4]			
Institutional Securities	**$ 48.3**	$ 42.9	$ 42.3
Wealth Management	**16.3**	13.4	11.3
Investment Management	**0.8**	0.9	1.7
ROTCE[5]			
Institutional Securities	**10 %**	20 %	16 %
Wealth Management	**31 %**	34 %	29 %
Investment Management	**86 %**	144 %	36 %

1. Net revenues and compensation expense are adjusted for certain employee deferred cash-based compensation plans for both Firm and Wealth Management business segment. See "Other Matters" herein for more information.
2. Adjusted amounts exclude the effect of costs related to the integrations of E*TRADE and Eaton Vance, net of tax as appropriate.
3. ROE and ROTCE represent earnings applicable to Morgan Stanley common shareholders as a percentage of average common equity and average tangible common equity, respectively. When excluding integration-related costs, both the numerator and average denominator are adjusted.
4. Average common equity and average tangible common equity for each business segment is determined using our Required Capital framework (see "Liquidity and Capital Resources—Regulatory Requirements—Attribution of Average Common Equity According to the Required Capital Framework" herein). The sums of the segments' Average common equity and Average tangible common equity do not equal the Consolidated measures due to Parent equity.
5. The calculation of ROE and ROTCE by segment uses net income applicable to Morgan Stanley by segment less preferred dividends allocated to each segment as a percentage of average common equity and average tangible common equity, respectively, allocated to each segment.

Return on Tangible Common Equity Goal

We have an ROTCE goal of over 20%. Our ROTCE goal is a forward-looking statement that was based on a normal market environment and may be materially affected by many factors.

See "Risk Factors" herein for further information on market and economic conditions and their potential effects on our future operating results.

For further information on non-GAAP measures (ROTCE excluding integration-related expenses), see "Selected Non-GAAP Financial Information" herein.

Business Segments

Substantially all of our operating revenues and operating expenses are directly attributable to our business segments. Certain revenues and expenses have been allocated to each business segment, generally in proportion to its respective net revenues, non-interest expenses or other relevant measures. See Note 23 to the financial statements for segment net revenues by income statement line item and information on intersegment transactions.

The global economic and geopolitical environment in 2022 was characterized by elevated inflation, rising interest rates and volatility in global financial markets and these factors have continued into 2023. This environment has impacted our businesses, as discussed further herein.

Net Revenues

Investment Banking

Investment banking revenues are derived from client engagements in which we act as an advisor, underwriter or distributor of capital.

Within the Institutional Securities business segment, these revenues are primarily composed of fees earned from underwriting equity and fixed income securities, syndicating loans and advisory services in relation to mergers and acquisitions, divestitures and corporate restructurings.

Within the Wealth Management business segment, these revenues are derived from the distribution of newly issued securities.

Trading

Trading revenues include the realized gains and losses from transactions in financial instruments, unrealized gains and losses from ongoing changes in the fair value of our positions, and gains and losses from financial instruments used to economically hedge compensation expense related to certain employee deferred compensation plans.

Within the Institutional Securities business segment, Trading revenues arise from transactions in cash instruments and derivatives in which we act as a market maker for our clients. In this role, we stand ready to buy, sell or otherwise transact with customers under a variety of market conditions and to provide firm or indicative prices in response to customer requests. Our liquidity obligations can be explicit in some cases, and in others, customers expect us to be willing to transact with them. In order to most effectively fulfill our market-making function, we engage in activities across all of our trading businesses that include, but are not limited to:

- taking positions in anticipation of, and in response to, customer demand to buy or sell and—depending on the liquidity of the relevant market and the size of the position—to hold those positions for a period of time;
- building, maintaining and rebalancing inventory held to facilitate client activity through trades with other market participants;
- managing and assuming basis risk (risk associated with imperfect hedging) between risks incurred from the facilitation of client transactions and the standardized products available in the market to hedge those risks;
- trading in the market to remain current on pricing and trends; and
- engaging in other activities to provide efficiency and liquidity for markets.

In many markets, the realized and unrealized gains and losses from purchase and sale transactions will include any spreads between bids and offers. Certain fees received on loans carried at fair value and dividends from equity securities are also recorded in Trading revenues since they relate to positions carried at fair value.

Within the Wealth Management business segment, Trading revenues primarily include revenues from customers' purchases and sales of fixed income instruments in which we act as principal, as well as gains and losses related to investments associated with certain employee deferred compensation plans.

Investments

Investments revenues are composed of realized and unrealized gains and losses derived from investments, including those associated with employee deferred compensation and co-investment plans. Estimates of the fair value of the investments that produce these revenues may involve significant judgment and may fluctuate significantly over time in light of business, market, economic and financial conditions, generally or in relation to specific transactions.

Within the Institutional Securities segment, gains and losses are primarily from business-related investments. Certain investments are subject to sale restrictions.

Within the Investment Management business segment, Investments revenues are primarily from performance-based fees in the form of carried interest, a portion of which is subject to reversal, and gains and losses from investments.

The business is entitled to receive carried interest when the return in certain funds exceeds specified performance targets. Additionally, there are certain sponsored Investment Management funds consolidated by us where revenues are primarily attributable to holders of noncontrolling interests.

Commissions and Fees

Commissions and fees result from arrangements in which the client is charged a fee for executing transactions related to securities, services related to sales and trading activities, and sales of other products.

Within the Institutional Securities business segment, commissions and fees include fees earned from market-making activities, such as executing and clearing client transactions on major stock and derivative exchanges, as well as from OTC derivatives.

Within the Wealth Management business segment, commissions and fees arise from client transactions primarily in equity securities, insurance products, mutual funds, futures and options. Wealth Management also earns revenues from order flow payments for directing customer orders to broker-dealers, exchanges and market centers for execution.

Asset Management

Asset management revenues include fees associated with the management and supervision of assets and the distribution of funds and similar products.

Within the Wealth Management business segment, Asset management revenues are related to advisory services associated with fee-based assets, account service and administration, as well as distribution of products. These revenues are generally based on the net asset value of the account in which a client is invested.

Within the Investment Management business segment, Asset management revenues are primarily composed of fees received from investment vehicles on the basis of assets under management. Performance-based fees, not in the form of carried interest, are earned on certain products and separately managed accounts as a percentage of appreciation in value and, in certain cases, are based upon the achievement of performance criteria. These performance fees are generally recognized annually.

Net Interest

Interest income and Interest expense are functions of the level and mix of total assets and liabilities, including Trading assets and Trading liabilities, Investment securities, Securities borrowed or purchased under agreements to resell, Securities loaned or sold under agreements to repurchase, Loans, Deposits and Borrowings.

Within the Institutional Securities business segment, Net interest is a function of market-making strategies, client activity, and the prevailing level, term structure and volatility of interest rates. Net interest is impacted by market-making activities as securities held by the Firm generally earn interest, as do securities borrowed and securities purchased under agreements to resell, while securities loaned and securities sold under agreements to repurchase generally incur interest expense.

Within the Wealth Management business segment, Interest income is driven by assets held including Investment securities, Loans and margin loans. Interest expense is driven by Deposits and other funding. Upon acquisition, E*TRADE's Investment securities were recorded at fair value, and the resulting premium is being amortized over the life of the portfolio against interest income.

Other

Other revenues for Institutional Securities include revenues and losses from equity method investments, fees earned in association with lending activities, mark-to-market gains and losses on loans and lending commitments held for sale, as well as gains and losses on economic derivative hedges associated with certain held-for-sale and held-for-investment loans and lending commitments.

Other revenues for Wealth Management include realized gains and losses on AFS securities, account handling fees, referral fees and other miscellaneous revenues.

Provision for Credit Losses

The Provision for credit losses includes the provision for credit losses for loans and lending commitments held for investment.

Institutional Securities—Fixed Income and Equities

Fixed income and Equities net revenues are composed of Trading revenues, Commissions and fees, Asset management revenues, Net interest, and certain Investments and Other revenues directly attributable to those businesses. These revenues, which can be affected by a variety of interrelated factors, including market volumes, bid-offer spreads and the impact of market conditions on inventory held to facilitate client activity, as well as the effect of hedging activity, are viewed in the aggregate when assessing the performance and profitability of our businesses.

Following is a description of the revenue-generating activities within our equity and fixed income businesses, as well as how their results impact the income statement line items.

Equity—Financing. We provide financing, prime brokerage and fund administration services to our clients active in the equity markets through a variety of products, including margin lending, securities lending and swaps. Results from this business are largely driven by the difference between financing income earned and financing costs incurred, which are reflected in Net interest for securities lending products,

and in Trading revenues for derivative products. Fees for providing fund administration services are reflected in Asset management revenues.

Equity—Execution services. A significant portion of the results for this business is generated by commissions and fees from executing and clearing client transactions on major stock and derivative exchanges, as well as from OTC transactions. We make markets for our clients principally in equity-related securities and derivative products, including those that provide liquidity and are utilized for hedging. Market-making also generates gains and losses on inventory held to facilitate client activity, which are reflected in Trading revenues. Execution services also includes certain Investments and Other revenues.

Fixed income—Within fixed income, we make markets in various flow and structured products in order to facilitate client activity as part of the following products and services:

- *Global macro products.* We make markets for our clients in interest rate, foreign exchange and emerging market products, including exchange-traded and OTC securities and derivative instruments. The results of this market-making activity are primarily driven by gains and losses from buying and selling positions to stand ready for and satisfy client demand and are recorded in Trading revenues.
- *Credit products.* We make markets in credit-sensitive products, such as corporate bonds and mortgage securities and other securitized products, and related derivative instruments. The values of positions in this business are sensitive to changes in credit spreads and interest rates, which result in gains and losses reflected in Trading revenues. We undertake lending activities, which include commercial mortgage lending, secured lending facilities and financing extended to sales and trading customers. Due to the amount and type of the interest-bearing securities and loans making up this business, a significant portion of the results is also reflected in Net interest revenues.
- *Commodities products and Other.* We make markets in various commodity products related primarily to electricity, natural gas, oil and metals. Other activities primarily include results from the centralized management of our fixed income derivative counterparty exposures and the management of derivative counterparty risk. These activities are primarily recorded in Trading revenues.

Fixed income also includes certain Investments and Other revenues.

Institutional Securities—Other Net Revenues

Other net revenues include impacts from certain treasury functions, such as liquidity costs and gains and losses on economic hedges related to certain borrowings. Other net revenues also include mark-to-market gains and losses on held-for-sale corporate loans and lending commitments, as well as net interest and gain and losses on economic hedges associated with held-for-sale and held-for-investment corporate loans and lending commitments. Also included are gains and losses from financial instruments used to economically hedge compensation expense related to certain employee deferred compensation plans, as well as Investments and Other revenues that are not directly attributable to Fixed income and Equities businesses.

Compensation Expense

Compensation and benefits expenses include base salaries and fixed allowances, formulaic programs, discretionary incentive compensation, amortization of deferred cash and equity awards, changes in the fair value of investments to which certain deferred compensation plans are referenced, including the Firm's share price for certain awards, carried interest allocated to employees, severance costs, and other items such as health and welfare benefits.

The factors that drive compensation for our employees vary from period to period, from segment to segment and within a segment. For certain revenue-producing employees in the Wealth Management and Investment Management business segments, compensation is largely paid on the basis of formulaic payouts that link employee compensation to revenues. Compensation for other employees, including revenue-producing employees in the Institutional Securities business segment, include base salary and benefits and may also include incentive compensation that is determined following the assessment of the Firm's, business unit's and individual's performance.

Compensation expense for deferred cash-based compensation plans is recognized over the relevant vesting period and is adjusted based on the notional earnings of the referenced investments until distribution. Although changes in compensation expense resulting from changes in the fair value of the referenced investments will generally be offset by changes in the fair value of investments made by the Firm, there is typically a timing difference between the immediate recognition of gains and losses on the Firm's investments and the compensation expense recognized over the vesting period.

Income Taxes

The income tax provision for our business segments is generally determined based on the revenues, expenses and activities directly attributable to each business segment. Certain items have been allocated to each business segment, generally in proportion to its respective net revenues or other relevant measures.

Institutional Securities

Income Statement Information

$ in millions	2022	2021	2020	% Change 2022	% Change 2021
Revenues					
Advisory	**$ 2,946**	$ 3,487	$ 2,008	**(16)%**	74 %
Equity	**851**	4,437	3,092	**(81)%**	43 %
Fixed income	**1,438**	2,348	2,104	**(39)%**	12 %
Total Underwriting	**2,289**	6,785	5,196	**(66)%**	31 %
Total Investment banking	**5,235**	10,272	7,204	**(49)%**	43 %
Equity	**10,769**	11,435	9,921	**(6)%**	15 %
Fixed income	**9,022**	7,516	8,847	**20 %**	(15)%
Other	**(633)**	610	504	**N/M**	21 %
Net revenues	**24,393**	29,833	26,476	**(18)%**	13 %
Provision for credit losses	**211**	(7)	731	**N/M**	(101)%
Compensation and benefits	**8,246**	9,165	8,342	**(10)%**	10 %
Non-compensation expenses	**9,221**	8,861	8,252	**4 %**	7 %
Total non-interest expenses	**17,467**	18,026	16,594	**(3)%**	9 %
Income before provision for income taxes	**6,715**	11,814	9,151	**(43)%**	29 %
Provision for income taxes	**1,308**	2,746	2,040	**(52)%**	35 %
Net income	**5,407**	9,068	7,111	**(40)%**	28 %
Net income applicable to noncontrolling interests	**165**	111	99	**49 %**	12 %
Net income applicable to Morgan Stanley	**$ 5,242**	$ 8,957	$ 7,012	**(41)%**	28 %

Investment Banking

Investment Banking Volumes

$ in billions	2022	2021	2020
Completed mergers and acquisitions[1]	**$ 897**	$ 1,107	$ 887
Equity and equity-related offerings[2, 3]	**23**	117	100
Fixed income offerings[2, 4]	**228**	371	377

Source: Refinitiv data as of January 3, 2023. Transaction volumes may not be indicative of net revenues in a given period. In addition, transaction volumes for prior periods may vary from amounts previously reported due to the subsequent withdrawal, change in value or change in timing of certain transactions.

1. Includes transactions of $100 million or more. Based on full credit to each of the advisors in a transaction.
2. Based on full credit for single book managers and equal credit for joint book managers.
3. Includes Rule 144A issuances and registered public offerings of common stock, convertible securities and rights offerings.
4. Includes Rule 144A and publicly registered issuances, non-convertible preferred stock, mortgage-backed and asset-backed securities, and taxable municipal debt. Excludes leveraged loans and self-led issuances.

Investment Banking Revenues

Investment banking revenues of $5,235 million in 2022 decreased 49% compared with the prior year, primarily reflecting a decrease in underwriting revenues in line with market levels, reflecting a significant decline in global volumes.

- Advisory revenues decreased primarily due to fewer completed M&A transactions.
- Equity underwriting revenues decreased on lower volumes, with lower revenues across all products, notably in initial public offerings, secondary block share trades and follow-on offerings.
- Fixed income underwriting revenues decreased primarily due to lower bond and loan issuances.

In 2022, Investment Banking operated in a global economic environment characterized, particularly in the second half of 2022, by significantly reduced M&A and underwriting activity in comparison to 2021 levels, amid elevated inflation, rising interest rates and market volatility. To the extent global announced M&A transactions and underwriting volumes remain at levels similar to those in the second half of 2022, we would expect these market conditions to continue to have an adverse impact on Investment Banking revenues compared to our performance in 2021.

See "Investment Banking Volumes" herein.

Equity, Fixed Income and Other Net Revenues

Equity and Fixed Income Net Revenues

$ in millions	2022 Trading	Fees[1]	Net Interest[2]	All Other[3]	Total
Financing	**$ 5,223**	**$ 535**	**$ (257)**	**$ 36**	**$ 5,537**
Execution services	**2,947**	**2,462**	**(81)**	**(96)**	**5,232**
Total Equity	**$ 8,170**	**$ 2,997**	**$ (338)**	**$ (60)**	**$ 10,769**
Total Fixed income	**$ 7,711**	**$ 341**	**$ 922**	**$ 48**	**$ 9,022**

$ in millions	2021 Trading	Fees[1]	Net Interest[2]	All Other[3]	Total
Financing	$ 4,110	$ 508	$ 520	$ 8	$ 5,146
Execution services	3,327	2,648	(226)	540	6,289
Total Equity	$ 7,437	$ 3,156	$ 294	$ 548	$ 11,435
Total Fixed income	$ 5,098	$ 307	$ 1,835	$ 276	$ 7,516

$ in millions	2020 Trading	Fees[1]	Net Interest[2]	All Other[3]	Total
Financing	$ 3,736	$ 439	$ 342	$ 4	$ 4,521
Execution services	2,882	2,658	(256)	116	5,400
Total Equity	$ 6,618	$ 3,097	$ 86	$ 120	$ 9,921
Total Fixed income	$ 6,841	$ 299	$ 1,696	$ 11	$ 8,847

1. Includes Commissions and fees and Asset management revenues.
2. Includes funding costs, which are allocated to the businesses based on funding usage.
3. Includes Investments and Other revenues.

Equity

Net revenues of $10,769 million in 2022 decreased 6% compared with the prior year, reflecting a decrease in execution services driven by markdowns on certain business-related investments and lower levels of client activity amid challenging market conditions, partially offset by an increase in financing.

- Financing revenues increased primarily due to the absence of a loss from a credit event for a single client in the prior year period, partially offset by the impact of lower average client balances.
- Execution services revenues decreased primarily due to mark-to-market losses on certain business-related investments compared to gains in the fourth quarter of 2021, lower client activity, as well as the impact of market conditions on inventory held to facilitate client activity in

cash equities, partially offset by the absence of trading losses related to the aforementioned credit event.

Fixed Income

Net revenues of $9,022 million in 2022 increased 20% compared with the prior year, primarily reflecting an increase in global macro products, which benefited from strong client engagement and increased client flow activity in an environment characterized by inflationary pressures, central bank actions and fiscal activity driving higher volatility.

- Global macro products revenues increased in rates and foreign exchange products, primarily due to the positive impact of market conditions on inventory held to facilitate client activity and increased client activity.
- Credit products revenues decreased, reflecting the impact of widening credit spreads and market volatility, primarily due to the impact of market conditions on inventory held to facilitate client activity in securitized products.
- Commodities products and other fixed income revenues increased primarily due to higher client activity in Commodities.

Other Net Revenues

Other net revenues reflected a loss of $633 million in 2022 compared to a gain in the prior year, primarily due to mark-to-market losses on corporate loans held for sale inclusive of hedges of $876 million in 2022 compared to $195 million in 2021, partially offset by higher net interest income and fees of $701 million in 2022 compared with $509 million in 2021. Also contributing to the decline were losses in 2022 compared with gains in 2021 on investments associated with certain employee deferred cash-based compensation plans and lower results from our Japanese joint venture, MUMSS.

Provision for Credit Losses

In 2022, the Provision for credit losses on loans and lending commitments of $211 million was driven by portfolio growth and deterioration in macroeconomic outlook. The Provision for credit losses on loans and lending commitments was a net release of $7 million in 2021, primarily as the impact of changes in loan quality mix were offset by portfolio growth.

For further information on the Provision for credit losses, see "Credit Risk" herein.

Non-interest Expenses

Non-interest expenses of $17,467 million in 2022 decreased 3% compared with the prior year due to lower Compensation and benefits expenses, partially offset by higher Non-compensation expenses.

- Compensation and benefits expenses decreased in the current year primarily due to lower discretionary incentive compensation on lower revenues, lower stock-based compensation expense driven by the Firm's share price, and lower expenses related to certain deferred cash-based compensation plans linked to investment performance, partially offset by higher salary expenses.
- Non-compensation expenses increased in the current year primarily due to an increase in legal expenses, including $200 million related to a regulatory matter in the second quarter of 2022 and an increased spend on technology.

Income Tax Items

The effective tax rate of 19.5% for 2022 was lower compared with the prior year, primarily driven by the realization of certain tax benefits.

Wealth Management

Income Statement Information

$ in millions	2022	2021	2020	% Change 2022	% Change 2021
Revenues					
Asset management	**$13,872**	$13,966	$10,955	**(1)%**	27 %
Transactional[1]	**2,473**	4,259	3,694	**(42)%**	15 %
Net interest	**7,429**	5,393	4,022	**38 %**	34 %
Other[1]	**643**	625	415	**3 %**	51 %
Net revenues	**24,417**	24,243	19,086	**1 %**	27 %
Provision for credit losses	**69**	11	30	**N/M**	(63)%
Compensation and benefits	**12,534**	13,090	10,970	**(4)%**	19 %
Non-compensation expenses	**5,231**	4,961	3,699	**5 %**	34 %
Total non-interest expenses	**17,765**	18,051	14,669	**(2)%**	23 %
Income before provision for income taxes	**6,583**	6,181	4,387	**7 %**	41 %
Provision for income taxes	**1,444**	1,447	1,026	**— %**	41 %
Net income applicable to Morgan Stanley	**$ 5,139**	$ 4,734	$ 3,361	**9 %**	41 %

1. Transactional includes Investment banking, Trading, and Commissions and fees revenues. Other includes Investments and Other revenues.

Acquisition of E*TRADE

The comparisons of current year results to prior periods are impacted by the acquisition of E*TRADE on October 2, 2020. For additional information on the acquisition of E*TRADE, see Note 3 to the financial statements.

Wealth Management Metrics

$ in billions	At December 31, 2022	At December 31, 2021
Total client assets[1]	**$ 4,187**	$ 4,989
U.S. Bank Subsidiary loans	**$ 146**	$ 129
Margin and other lending[2]	**$ 22**	$ 31
Deposits[3]	**$ 351**	$ 346
Annualized weighted average cost of deposits[4]		
Period end	**1.59%**	0.10%
Period average	**0.53%**	0.16%

	2022	2021	2020
Net new assets[5]	**$ 311.3**	$ 437.7	$ 182.7

1. Client assets represent those for which Wealth Management is providing services including financial advisor-led brokerage, custody, administrative and investment advisory services; self-directed brokerage and investment advisory services; financial and wealth planning services; workplace services, including stock plan administration, and retirement plan services. The prior period amount has been revised to conform to the current presentation. See "Self-directed Channel" herein for additional information.
2. Margin and other lending represents margin lending arrangements, which allow customers to borrow against the value of qualifying securities and other lending which includes non-purpose securities-based lending on non-bank entities.
3. Deposits reflect liabilities sourced from Wealth Management clients and other sources of funding on the U.S. Bank Subsidiaries. Deposits include sweep deposit programs, savings and other, and time deposits. Excludes approximately $6 billion and $9 billion of off-balance sheet deposits as of December 31, 2022 and December 31, 2021, respectively.
4. Annualized weighted average represents the total annualized weighted average cost of the various deposit products, excluding the effect of related hedging derivatives. The period end cost of deposits is based upon balances and rates as of December 31, 2022 and December 31, 2021. The period average is based on daily balances and rates for the year-to-date period.
5. Net new assets represent client asset inflows, including dividends and interest, and asset acquisitions, less client asset outflows, and exclude activity from business combinations/divestitures and the impact of fees and commissions.

Advisor-led Channel

$ in billions	At December 31, 2022	At December 31, 2021
Advisor-led client assets[1]	**$ 3,392**	$ 3,886
Fee-based client assets[2]	**$ 1,678**	$ 1,839
Fee-based client assets as a percentage of advisor-led client assets	**49%**	47%

	2022	2021	2020
Fee-based asset flows[3]	**$ 162.8**	$ 179.3	$ 77.4

1. Advisor-led client assets represent client assets in accounts that have a Wealth Management representative assigned.
2. Fee-based client assets represent the amount of assets in client accounts where the basis of payment for services is a fee calculated on those assets.
3. Fee-based asset flows include net new fee-based assets (including asset acquisitions), net account transfers, dividends, interest and client fees, and exclude institutional cash management related activity. For a description of the Inflows and Outflows included in Fee-based asset flows, see Fee-based client assets herein.

Self-directed Channel

$ in billions	At December 31, 2022	At December 31, 2021
Self-directed assets[1]	**$ 795**	$ 1,103
Self-directed households (in millions)[2]	**8.0**	7.4

	2022	2021	2020
Daily average revenue trades ("DARTs") (in thousands)[3]	**864**	1,161	280

1. Self-directed assets represent active accounts which are not advisor led. Active accounts are defined as having at least $25 in assets. The prior period amount has been revised to include certain additional vested client employee stock options to align the timing of recognition with other existing Morgan Stanley client assets.
2. Self-directed households represent the total number of households that include at least one account with self-directed assets. Individual households or participants that are engaged in one or more of our Wealth Management channels are included in each of the respective channel counts.
3. DARTs represent the total self-directed trades in a period divided by the number of trading days during that period.

Workplace Channel[1]

$ in billions	At December 31, 2022	At December 31, 2021
Workplace unvested assets[2]	**$ 302**	$ 509
Number of participants (in millions)[3]	**6.3**	5.6

1. The workplace channel includes equity compensation solutions for companies, their executives and employees.
2. Stock plan unvested assets represent the market value of public company securities at the end of the period. The stock plan vested asset retention rate within the workplace channel, which represents the percentage of stock plan assets retained in either the self-directed or advisor-led channels following vesting, is 34% and 24% for 2022 and 2021, respectively. The rate is derived using the stock plan inflows for the previous year, less related outflows for the previous year and reported year, and dividing the result by the previous year inflows.
3. Stock plan participants represent total accounts with vested and/or unvested stock plan assets in the workplace channel. Individuals with accounts in multiple plans are counted as participants in each plan.

Net Revenues

Asset Management

Asset management revenues of $13,872 million in 2022 were relatively unchanged compared with the prior year, reflecting the impact of lower market levels offset by positive flows on fee-based assets.

See "Fee-Based Client Assets Rollforwards" herein.

Transactional Revenues

Transactional revenues of $2,473 million in 2022 decreased 42% compared with the prior year, primarily due to losses on

investments associated with certain employee deferred cash-based compensation plans and lower client activity in equities.

For further information on the impact of investments associated with certain employee deferred cash-based compensation plans, see "Selected Non-GAAP Financial Information" herein.

Net Interest

Net interest revenues of $7,429 million in 2022 increased 38% compared with the prior year, primarily due to net effect of higher interest rates and growth in bank lending.

The level and pace of interest rate changes and other macroeconomic factors may impact client demand for loans as well as preferences for cash allocation to other products, potentially resulting in changes in the deposit mix and associated interest expense. As such net interest income may be impacted in future periods.

Non-interest Expenses

Non-interest expenses of $17,765 million in 2022 decreased 2% compared with the prior year, as a result of lower Compensation and benefits expenses, partially offset by higher Non-compensation expenses.

- Compensation and benefits expenses decreased, primarily due to lower expenses related to certain deferred cash-based compensation plans linked to investment performance and a decrease in the formulaic payout to Wealth Management representatives driven by lower compensable revenues, partially offset by the impact of higher headcount.

  For further information on the impact of expenses related to certain employee deferred cash-based compensation plans linked to investment performance, see "Selected Non-GAAP Financial Information" herein.

- Non-compensation expenses increased, primarily driven by spend on technology and higher marketing and business development costs.

Fee-Based Client Assets Rollforwards

$ in billions	At December 31, 2021	Inflows[1]	Outflows	Market Impact	At December 31, 2022
Separately managed[2]	$ 479	**$ 141**	**$ (25)**	**$ (94)**	**$ 501**
Unified managed	467	**76**	**(50)**	**(85)**	**408**
Advisor	211	**29**	**(35)**	**(38)**	**167**
Portfolio manager	636	**94**	**(67)**	**(111)**	**552**
Subtotal	$ 1,793	**$ 340**	**$ (177)**	**$ (328)**	**$ 1,628**
Cash management	46	**38**	**(34)**	**—**	**50**
Total fee-based client assets	$ 1,839	**$ 378**	**$ (211)**	**$ (328)**	**$ 1,678**

$ in billions	At December 31, 2020	Inflows[3]	Outflows	Market Impact	At December 31, 2021
Separately managed[2]	$ 359	$ 86	$ (20)	$ 54	$ 479
Unified managed	379	100	(54)	42	467
Advisor	177	42	(30)	22	211
Portfolio manager	509	113	(58)	72	636
Subtotal	$ 1,424	$ 341	$ (162)	$ 190	$ 1,793
Cash management	48	30	(32)	—	46
Total fee-based client assets	$ 1,472	$ 371	$ (194)	$ 190	$ 1,839

$ in billions	At December 31, 2019	Inflows	Outflows	Market Impact	At December 31, 2020
Separately managed[2]	$ 322	$ 48	$ (25)	$ 14	$ 359
Unified managed	313	63	(43)	46	379
Advisor	155	33	(28)	17	177
Portfolio manager	435	86	(57)	45	509
Subtotal	$ 1,225	$ 230	$ (153)	$ 122	$ 1,424
Cash management	42	28	(22)	—	48
Total fee-based client assets	$ 1,267	$ 258	$ (175)	$ 122	$ 1,472

1. Includes $75 billion of fee-based assets acquired in an asset acquisition in the first quarter of 2022, reflected in Separately managed.
2. Includes non-custody account values reflecting prior quarter-end balances due to a lag in the reporting of asset values by third-party custodians.
3. Includes $43 billion of fee-based assets acquired in an asset acquisition in the third quarter of 2021, reflected in Separately managed.

Average Fee Rates[1]

Fee rate in bps	**2022**	2021	2020
Separately managed	**12**	14	14
Unified managed	**94**	95	99
Advisor	**81**	82	85
Portfolio manager	**92**	93	94
Subtotal	**66**	72	73
Cash management	**6**	5	5
Total fee-based client assets	**65**	70	70

1. Based on Asset management revenues related to advisory services associated with fee-based assets.

- *Inflows*—include new accounts, account transfers, deposits, dividends and interest.
- *Outflows*—include closed or terminated accounts, account transfers, withdrawals and client fees.
- *Market impact*—includes realized and unrealized gains and losses on portfolio investments.
- *Separately managed*—accounts by which third-party and affiliated asset managers are engaged to manage clients' assets with investment decisions made by the asset manager. Only one third-party asset manager strategy can be held per account.

- *Unified managed*—accounts that provide the client with the ability to combine separately managed accounts, mutual funds and exchange-traded funds all in one aggregate account. Investment decisions and discretionary authority may be exercised by the client, financial advisor or portfolio manager. Also includes accounts that give the client the ability to systematically allocate assets across a wide range of mutual funds, for which the investment decisions are made by the client.
- *Advisor*—accounts where the investment decisions must be approved by the client and the financial advisor must obtain approval each time a change is made to the account or its investments.
- *Portfolio manager*—accounts where a financial advisor has discretion (contractually approved by the client) to make ongoing investment decisions without the client's approval for each individual change.
- *Cash management*—accounts where the financial advisor provides discretionary cash management services to institutional clients, whereby securities or proceeds are invested and reinvested in accordance with the client's investment criteria. Generally, the portfolio will be invested in short-term fixed income and cash equivalent investment.

Investment Management

Income Statement Information

$ in millions	2022	2021	2020	% Change 2022	% Change 2021
Revenues					
Asset management and related fees	**$ 5,332**	$ 5,576	$ 3,013	**(4)%**	85 %
Performance-based income and other[1]	**43**	644	721	**(93)%**	(11)%
Net revenues	**5,375**	6,220	3,734	**(14)%**	67 %
Compensation and benefits	**2,273**	2,373	1,542	**(4)%**	54 %
Non-compensation expenses	**2,295**	2,169	1,322	**6 %**	64 %
Total non-interest expenses	**4,568**	4,542	2,864	**1 %**	59 %
Income before provision for income taxes	**807**	1,678	870	**(52)%**	93 %
Provision for income taxes	**162**	356	171	**(54)%**	108 %
Net income	**645**	1,322	699	**(51)%**	89 %
Net income applicable to noncontrolling interests	**(15)**	(25)	84	**40 %**	(130)%
Net income applicable to Morgan Stanley	**$ 660**	$ 1,347	$ 615	**(51)%**	119 %

1. Includes Investments, Trading, Commissions and fees, Net interest and Other revenues.

Acquisition of Eaton Vance

The comparisons of current year results to prior periods are impacted by the acquisition of Eaton Vance on March 1, 2021. For additional information on the acquisition of Eaton Vance, see Note 3 to the financial statements.

Net Revenues

Asset Management and Related Fees

Asset management and related fees of $5,332 million in 2022 decreased 4% compared with the prior year, reflecting the impact of the decline in the equity markets, partially offset by incremental revenues as a result of the Eaton Vance acquisition and the impact of lower fee waivers in certain money market funds.

Asset management revenues are influenced by the level and relative mix of AUM and related fee rates. The current market environment may impact AUM and net flows within asset classes and therefore our asset management revenues.

See "Assets under Management or Supervision" herein.

Performance-based Income and Other

Performance-based income and other revenues were $43 million in 2022, representing a 93% decrease from the prior year, primarily due to lower accrued carried interest in certain private equity and real estate funds, losses on investments associated with certain employee deferred cash-based compensation plans, and mark-to-market losses on public investments.

Non-interest Expenses

Non-interest expenses of $4,568 million in 2022 were relatively unchanged from the prior year period, reflecting higher Non-compensation expenses offset by lower Compensation and benefits.

- Compensation and benefits expenses decreased primarily due to lower discretionary incentive compensation driven by lower asset management revenues and lower compensation associated with carried interest, partially offset by the impact of incremental compensation as a result of the Eaton Vance acquisition.
- Non-compensation expenses increased primarily due to higher marketing and business development costs and incremental expenses as a result of the Eaton Vance acquisition.

Assets under Management or Supervision

Rollforwards

$ in billions	Equity	Fixed Income	Alternatives and Solutions	Long-Term AUM Subtotal	Liquidity and Overlay Services	Total
December 31, 2021	$ 395	$ 207	$ 466	$ 1,068	$ 497	$1,565
Inflows	**56**	**66**	**102**	**224**	**2,224**	**2,448**
Outflows	**(74)**	**(78)**	**(83)**	**(235)**	**(2,268)**	**(2,503)**
Market Impact	**(106)**	**(16)**	**(47)**	**(169)**	**(6)**	**(175)**
Other	**(12)**	**(6)**	**(7)**	**(25)**	**(5)**	**(30)**
December 31, 2022	**$ 259**	**$ 173**	**$ 431**	**$ 863**	**$ 442**	**$1,305**

$ in billions	Equity	Fixed Income	Alternatives and Solutions	Long-Term AUM Subtotal	Liquidity and Overlay Services	Total
December 31, 2020	$ 242	$ 98	$ 153	$ 493	$ 288	$ 781
Inflows	100	67	95	262	1,940	2,202
Outflows	(85)	(55)	(78)	(218)	(1,852)	(2,070)
Market Impact	34	—	51	85	6	91
Acquired[1]	119	103	251	473	116	589
Other	(15)	(6)	(6)	(27)	(1)	(28)
December 31, 2021	$ 395	$ 207	$ 466	$ 1,068	$ 497	$1,565

$ in billions	Equity	Fixed Income	Alternatives and Solutions	Long-Term AUM Subtotal	Liquidity and Overlay Services	Total
December 31, 2019	$ 138	$ 79	$ 139	$ 356	$ 196	$ 552
Inflows	87	37	26	150	1,584	1,734
Outflows	(51)	(29)	(24)	(104)	(1,493)	(1,597)
Market Impact	69	4	5	78	1	79
Other	(1)	7	7	13	—	13
December 31, 2020	$ 242	$ 98	$ 153	$ 493	$ 288	$ 781

1. Related to the Eaton Vance acquisition.

Average AUM

$ in billions	**2022**	2021	2020
Equity	**$ 298**	$ 362	$ 174
Fixed income	**186**	181	86
Alternatives and Solutions	**435**	380	145
Long-term AUM subtotal	**919**	923	405
Liquidity and Overlay Services	**462**	430	252
Total AUM	**$ 1,381**	$ 1,353	$ 657

Average Fee Rates[1]

Fee rate in bps	**2022**	2021	2020
Equity	**70**	74	76
Fixed income	**35**	38	29
Alternatives and Solutions	**34**	36	58
Long-term AUM	**46**	51	60
Liquidity and Overlay Services	**11**	5	15
Total AUM	**34**	37	42

1. Based on Asset management revenues, net of waivers, excluding performance-based fees and other non-management fees. For certain non-U.S. funds, it includes the portion of advisory fees that the advisor collects on behalf of third-party distributors. The payment of those fees to the distributor is included in Non-compensation expenses in the income statement.

- *Inflows*—represent investments or commitments from new and existing clients in new or existing investment products, including reinvestments of client dividends and increases in invested capital. Inflows exclude the impact of exchanges, whereby a client changes positions within the same asset class.

- *Outflows*—represent redemptions from clients' funds, transition of funds from the committed capital period to the invested capital period and decreases in invested capital. Outflows exclude the impact of exchanges, whereby a client changes positions within the same asset class.

- *Market impact*—includes realized and unrealized gains and losses on portfolio investments. This excludes any funds where market impact does not impact management fees.

- *Other*—contains both distributions and foreign currency impact for all periods. Distributions represent decreases in invested capital due to returns of capital after the investment period of a fund. It also includes fund dividends that the client has not reinvested. Foreign currency impact reflects foreign currency changes for non-U.S. dollar dominated funds.

- *Alternatives and Solutions*—includes products in fund of funds, real estate, infrastructure, private equity and credit strategies and multi-asset portfolios, as well as systematic strategies that create custom investment solutions.

- *Liquidity and Overlay Services*—includes liquidity fund products, as well as overlay services, which represent investment strategies that use passive exposure instruments to obtain, offset or substitute specific portfolio exposures, beyond those provided by the underlying holdings of the fund.

Supplemental Financial Information

U.S. Bank Subsidiaries

Our U.S. bank subsidiaries, Morgan Stanley Bank N.A. ("MSBNA") and Morgan Stanley Private Bank, National Association ("MSPBNA") (together, "U.S. Bank Subsidiaries"), accept deposits, provide loans to a variety of customers, including large corporate and institutional clients as well as high to ultra-high net worth individuals, and invest in securities. Lending activity in the U.S. Bank Subsidiaries from the Institutional Securities business segment primarily includes Secured lending facilities and Commercial real estate loans. Lending activity in the U.S. Bank Subsidiaries from the Wealth Management business segment primarily includes Securities-based lending, which allows clients to borrow money against the value of qualifying securities, and Residential real estate loans.

For a further discussion of our credit risks, see "Quantitative and Qualitative Disclosures about Risk—Credit Risk" herein. For a further discussion about loans and lending commitments, see Notes 10 and 15 to the financial statements.

U.S. Bank Subsidiaries' Supplemental Financial Information[1]

$ in billions	At December 31, 2022	At December 31, 2021
Investment securities portfolio:		
Investment securities—AFS	$ 66.9	$ 81.6
Investment securities—HTM	56.4	61.7
Total investment securities	**$ 123.3**	$ 143.3
Wealth Management Loans[2]		
Residential real estate	$ 54.4	$ 44.2
Securities-based lending and Other[3]	91.7	85.0
Total, net of ACL	**$ 146.1**	$ 129.2
Institutional Securities Loans[2]		
Corporate	$ 6.9	$ 6.5
Secured lending facilities	37.1	33.1
Commercial and Residential real estate	10.2	10.4
Securities-based lending and Other	6.0	6.3
Total, net of ACL	**$ 60.2**	$ 56.3
Total Assets	**$ 391.0**	$ 386.1
Deposits[4]	$ 350.6	$ 346.2

1. Amounts exclude transactions between the bank subsidiaries, as well as deposits from the Parent Company and affiliates.
2. For a further discussion of loans in the Wealth Management and Institutional Securities business segments, see "Quantitative and Qualitative Disclosures about Risk—Credit Risk" herein.
3. Other loans primarily include tailored lending.
4. For further information on deposits, see "Liquidity and Capital Resources—Funding Management—Balance Sheet—Unsecured Financing" herein.

Other Matters

Deferred Cash-Based Compensation

The Firm sponsors a number of deferred cash-based compensation programs for current and former employees, which generally contain vesting, clawback and cancellation provisions.

Employees are permitted to allocate the value of their deferred awards among a menu of notional investments, whereby the value of their awards will track the performance of the referenced notional investments. The menu of investments, which is selected by the Firm, includes fixed income, equity, commodity and money market funds.

Compensation expense for deferred cash-based compensation awards is calculated based on the notional value of the award granted, adjusted for changes in the fair value of the referenced investments that employees select. Compensation expense is recognized over the vesting period relevant to each separately vesting portion of deferred awards.

We invest directly, as a principal, in financial instruments and other investments to economically hedge certain of our obligations under these deferred cash-based compensation plans. Changes in the fair value of such investments, net of financing costs, are recorded in Net revenues, and included in Transactional revenues in the Wealth Management business segment. Although changes in compensation expense resulting from changes in the fair value of the referenced investments will generally be offset by changes in the fair value of investments recognized in net revenues, there is typically a timing difference between the immediate recognition of gains and losses on our investments and the deferred recognition of the related compensation expense over the vesting period. While this timing difference may not be material to our Income before provision for income taxes in any individual period, it may impact the Wealth Management business segment reported ratios and operating metrics in certain periods due to potentially significant impacts to net revenues and compensation expenses. At December 31, 2022, substantially all employee notional investments that subjected the Firm to price risk were economically hedged.

Amounts Recognized in Compensation Expense

$ in millions	2022	2021	2020
Deferred cash-based awards	$ 761	$ 810	$ 1,263
Return on referenced investments	(716)	526	856
Total recognized in compensation expense	**$ 45**	$ 1,336	$ 2,119

Amounts Recognized in Compensation Expense by Segment

$ in millions	2022	2021	2020
Institutional Securities	$ (97)	$ 372	$ 851
Wealth Management	11	798	1,000
Investment Management	131	166	268
Total recognized in compensation expense	**$ 45**	$ 1,336	$ 2,119

Projected Future Compensation Obligation[1]

$ in millions		
Award liabilities at December 31, 2022[2, 3]	$	4,880
Fully vested amounts to be distributed by the end of February 2023[4]		(729)
Unrecognized portion of prior awards at December 31, 2022[3]		1,096
2022 performance year awards granted in 2023[3]		384
Total[5]	$	5,631

1. Amounts relate to performance years 2022 and prior.
2. Balance is reflected in Other liabilities and accrued expenses in the balance sheet as of December 31, 2022.
3. Amounts do not include assumptions regarding forfeitures or assumptions about future market conditions with respect to referenced investments.
4. Distributions after February of each year are generally immaterial.
5. Of the total projected future compensation obligation, approximately 20% relates to Institutional Securities, approximately 70% relates to Wealth Management and approximately 10% relates to Investment Management.

The previous table presents a rollforward of the Firm's estimated projected future compensation obligation for existing deferred cash-based compensation awards, exclusive of any assumptions about future market conditions with respect to referenced investments.

Projected Future Compensation Expense[1]

$ in millions		
Estimated to be recognized in:		
2023	$	478
2024		292
Thereafter		710
Total	$	1,480

1. Amounts relate to performance years 2022 and prior, and do not include assumptions regarding forfeitures or assumptions about future market conditions with respect to referenced investments.

The previous table sets forth an estimate of compensation expense associated with the Projected Future Compensation Obligation. Our projected future compensation obligation and expense for deferred cash-based compensation for performance years 2022 and prior are forward-looking statements subject to uncertainty. Actual results may be materially affected by various factors, including, among other things: the performance of each participant's referenced investments; changes in market conditions; participants' allocation of their deferred awards; and participant cancellations or accelerations. See "Forward-Looking Statements" and "Risk Factors" for additional information.

For further information on the Firm's deferred stock-based plans and carried interest compensation, which are excluded from the previous tables, see Notes 2 and 20 to the financial statements.

Accounting Development Updates

The Financial Accounting Standards Board has issued certain accounting updates that apply to us. Accounting updates not listed below were assessed and either determined to be not applicable or to not have a material impact on our financial condition or results of operations upon adoption.

We adopted the following accounting updates on January 1, 2023:

- *Financial Instruments—Credit Losses.* This accounting update eliminates the accounting guidance for Troubled Debt Restructurings ("TDRs") and requires new disclosures regarding certain modifications of financing receivables (*i.e.*, principal forgiveness, interest rate reductions, other-than-insignificant payment delays and term extensions) to borrowers experiencing financial difficulty. The update also requires disclosure of current period gross charge-offs by year of origination for financing receivables measured at amortized cost. We adopted this update on a prospective basis and noted no impact on our financial condition or results of operation upon adoption.

We are currently evaluating the following accounting update, however, we do not expect a material impact on our financial condition or results of operations upon adoption:

- *Fair Value Measurement.* This accounting update clarifies that a contractual restriction on the sale of an equity security is not considered part of the unit of account of the equity security and, therefore, is not considered in measuring fair value. The update also requires additional disclosures including the fair value of equity securities subject to contractual sale restrictions, the nature and remaining duration of the restriction and circumstances that could cause the restriction to lapse. The ASU is effective January 1, 2024 with early adoption permitted.

Critical Accounting Estimates

Our financial statements are prepared in accordance with U.S. GAAP, which requires us to make estimates and assumptions (see Note 1 to the financial statements). We believe that of our significant accounting policies (see Note 2 to the financial statements), the following policies involve a higher degree of judgment and complexity.

Fair Value

Financial Instruments Measured at Fair Value

A significant number of our financial instruments are carried at fair value. The use of fair value to measure financial instruments is fundamental to our risk management practices and is our most critical accounting estimate. We make estimates regarding the valuation of assets and liabilities measured at fair value in preparing the financial statements. These assets and liabilities include, but are not limited to:

- Trading assets and Trading liabilities;
- Investment Securities—AFS;
- Certain Securities purchased under agreements to resell;
- Loans held-for-sale (measured at the lower of amortized cost or fair value);
- Certain Deposits, primarily certificates of deposit;
- Certain Securities sold under agreements to repurchase;
- Certain Other secured financings; and
- Certain Borrowings.

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (*i.e.*, the exit price) in an orderly transaction between market participants at the measurement date.

In determining fair value, we use various valuation approaches. A hierarchy for inputs is used in measuring fair value that maximizes the use of observable prices and inputs and minimizes the use of unobservable prices and inputs by requiring that the relevant observable inputs be used when available. The hierarchy is broken down into three levels, wherein Level 1 represents quoted prices in active markets, Level 2 represents valuations based on quoted prices in markets that are not active or for which all significant inputs are observable, and Level 3 consists of valuation techniques that incorporate significant unobservable inputs and, therefore, require the greatest use of judgment. The fair values for the substantial majority of our financial assets and liabilities carried at fair value are based on observable prices and inputs and are classified in level 1 or 2 of the fair value hierarchy. Level 3 financial assets represented 1.4% and 1.1% of our total assets, as of December 31, 2022 and December 31, 2021, respectively.

In periods of market disruption, the observability of prices and inputs, as well as market liquidity may be reduced for many instruments, which could cause an instrument to be recategorized from Level 1 to Level 2 or from Level 2 to Level 3. In addition, a downturn in market conditions could lead to declines in the valuation of many instruments carried at fair value. Imprecision in estimating unobservable market inputs or other factors can affect the amount of gain or loss recorded for a particular position. The Firm uses various methodologies and assumptions in the determination of fair value. The use of methodologies or assumptions different than those used by the Firm could result in a different estimate of fair value at the reporting date. For further information on the definition of fair value, Level 1, Level 2, Level 3 and related valuation techniques, and quantitative information about and sensitivity of significant unobservable inputs used in Level 3 fair value measurements, see Notes 2 and 5 to the financial statements.

Where appropriate, valuation adjustments are made to account for various factors such as liquidity risk (bid-ask adjustments), credit quality, model uncertainty, concentration risk and funding in order to arrive at fair value. For a further discussion of valuation adjustments that we apply, see Note 2 to the financial statements.

Goodwill and Intangible Assets

Goodwill

We test goodwill for impairment on an annual basis as of July 1 and on an interim basis when certain events or circumstances exist. Evaluating goodwill for impairment requires management to make significant judgments, including, in part, the use of unobservable inputs that are subject to uncertainty. Goodwill impairment tests are performed at the reporting unit level, which is generally at the level of or one level below our business segments. Goodwill no longer retains its association with a particular acquisition once it has been assigned to a reporting unit. As such, all the activities of a reporting unit, whether acquired or organically developed, are available to support the value of the goodwill.

For both the annual and interim tests, we have the option to either (i) perform a quantitative impairment test or (ii) first perform a qualitative assessment to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount, in which case the quantitative test would be performed.

When performing a quantitative impairment test, we compare the fair value of a reporting unit with its carrying amount, including goodwill. If the fair value of the reporting unit is less than its carrying amount, the goodwill impairment loss is equal to the excess of the carrying value over the fair value, limited by the carrying amount of goodwill allocated to that reporting unit.

The carrying value of each reporting unit is determined based on the capital allocated to the reporting unit. The estimated fair value of the reporting units is derived based on valuation techniques we believe market participants would use for each of the reporting units. The estimated fair value is generally determined by utilizing a discounted cash flow methodology. In certain instances, we may also utilize methodologies that incorporate price-to-book and price-to-earnings multiples of certain comparable companies.

The discounted cash flow methodology uses projected future cash flows based on the reporting units' earnings forecast. The discount rate used represents an estimate of the cost of equity for that reporting unit based on the Capital Asset Pricing Model.

At each annual goodwill impairment testing date, each of our reporting units with goodwill had a fair value that was substantially in excess of its carrying value.

Intangible Assets

Intangible assets are initially recorded at cost, or in the situation where acquired as part of a business combination, at the fair value determined as part of the acquisition method of accounting. Subsequently, amortizable intangible assets are carried in the balance sheet at amortized cost, where amortization is recognized over their estimated useful lives.

Indefinite lived intangible assets are not amortized but are tested for impairment on an annual basis as of July 1 and on an interim basis when certain events or circumstances exist.

On a quarterly basis:
- All intangible assets are assessed for the presence of impairment indicators. Where such indicators are present, an evaluation for impairment is conducted.
- For amortizable intangible assets, an impairment loss exists if the carrying amount of the intangible asset is not recoverable and exceeds its fair value. The carrying amount of the intangible asset is not recoverable if it exceeds the sum of the expected undiscounted cash flows.
- For indefinite-lived intangible assets, an impairment exists if the carrying amount of the intangible asset exceeds its fair value.
- Amortizable intangible assets are assessed for any indication that the remaining useful life or the finite life classification should be revised. In such cases, the remaining carrying amount is amortized prospectively over the revised useful life, unless it is determined that the life of the intangible asset is indefinite, in which case the intangible asset is not amortized.
- Indefinite-lived intangible assets are assessed for any indication that the life of the intangible asset is no longer indefinite; in such cases, the carrying amount of the intangible asset is amortized prospectively over its remaining useful life.

The initial valuation of an intangible asset as part of the acquisition method of accounting and the subsequent valuation of intangible assets as part of an impairment assessment are subjective and based, in part, on inputs that are unobservable and can be subject to uncertainty. These inputs include, but are not limited to, forecasted cash flows, revenue growth rates, customer attrition rates and discount rates.

For both goodwill and intangible assets, to the extent an impairment loss is recognized, the loss establishes the new cost basis of the asset. Subsequent reversal of impairment losses is not permitted. For amortizable intangible assets, the new cost basis is amortized over the remaining useful life of that asset. Unanticipated declines in our revenue generating capability, adverse market or economic events, and regulatory actions, could result in material impairment charges in future periods.

See Notes 2, 3 and 11 to the financial statements for additional information about goodwill and intangible assets.

Legal and Regulatory Contingencies

In the normal course of business, we have been named, from time to time, as a defendant in various legal actions, including arbitrations, class actions and other litigation, arising in connection with our activities as a global diversified financial services institution.

Certain of the actual or threatened legal actions include claims for substantial compensatory and/or punitive damages or claims for indeterminate amounts of damages. In some cases, the entities that would otherwise be the primary defendants in such cases are bankrupt or are in financial distress.

We are also involved, from time to time, in other reviews, investigations and proceedings (both formal and informal) by governmental and self-regulatory agencies regarding our business and involving, among other matters, investment banking advisory services, capital markets activities, sales, trading, financing, prime-brokerage, market-making activities, wealth and investment management services, financial products or offerings sponsored, underwritten or sold by us, and accounting and operational matters, certain of which may result in adverse judgments, settlements, fines, penalties, injunctions, limitations on our ability to conduct certain business, or other relief.

Accruals for litigation and regulatory proceedings are generally determined on a case-by-case basis. Where available information indicates that it is probable a liability had been incurred at the date of the financial statements and we can reasonably estimate the amount of that loss, we accrue the estimated loss by a charge to income.

In many proceedings and investigations, however, it is inherently difficult to determine whether any loss is probable or even possible or to estimate the amount of any loss. In addition, even where a loss is possible or an exposure to loss exists in excess of the liability already accrued with respect to a previously recognized loss contingency, it is not always possible to reasonably estimate the size of the possible loss or range of loss, particularly for proceedings and investigations where the factual record is being developed or contested or where plaintiffs or government entities seek substantial or indeterminate damages, restitution, disgorgement or penalties. Numerous issues may need to be resolved before a loss or additional loss or range of loss or additional range of loss can be reasonably estimated for a proceeding or investigation, including through potentially lengthy discovery and determination of important factual matters, determination of issues related to class certification and the calculation of damages or other relief, and consideration of novel or unsettled legal questions relevant to the proceedings or investigations in question.

Significant judgment is required in deciding when and if to make these accruals, and the actual cost of a legal claim or regulatory fine/penalty may ultimately be materially different from the recorded accruals.

See Note 15 to the financial statements for additional information on legal contingencies.

Income Taxes

We are subject to the income and indirect tax laws of the U.S., its states and municipalities and those of the foreign

jurisdictions in which we have significant business operations. These tax laws are complex and subject to interpretation by the taxpayer and the relevant governmental taxing authorities. We must make judgments and interpretations about the application of these inherently complex tax laws when determining the provision for income taxes and the expense for indirect taxes and must also make estimates about when certain items affect taxable income in the various tax jurisdictions.

Disputes over interpretations of the tax laws may be settled with the taxing authority upon examination or audit. We periodically evaluate the likelihood of assessments in each taxing jurisdiction resulting from current and subsequent years' examinations, and unrecognized tax benefits related to potential losses that may arise from tax audits are established in accordance with the relevant accounting guidance. Once established, unrecognized tax benefits are adjusted when there is more information available or when an event occurs requiring a change.

Our provision for income taxes is composed of current and deferred taxes. Current income taxes approximate taxes to be paid or refunded for the current period. Deferred income taxes reflect the net tax effects of temporary differences between the financial reporting and tax bases of assets and liabilities and are measured using the applicable enacted tax rates and laws that will be in effect when such differences are expected to reverse.

Our deferred tax balances may also include deferred assets related to tax attribute carryforwards, such as net operating losses and tax credits that will be realized through reduction of future tax liabilities and, in some cases, are subject to expiration if not utilized within certain periods. We perform regular reviews to ascertain whether deferred tax assets are realizable. These reviews include management's estimates and assumptions regarding future taxable income and incorporate various tax planning strategies, including strategies that may be available to tax attribute carryforwards before they expire.

Once the deferred tax asset balances have been determined, we may record a valuation allowance against the deferred tax asset balances to reflect the amount we estimate is more likely than not to be realized at a future date. Both current and deferred income taxes may reflect adjustments related to our unrecognized tax benefits.

Significant judgment is required in estimating the consolidated provision for (benefit from) income taxes, current and deferred tax balances (including valuation allowance, if any), accrued interest or penalties and uncertain tax positions. Revisions in estimates and/or the actual costs of a tax assessment may ultimately be materially different from the recorded accruals and unrecognized tax benefits, if any.

See Note 2 to the financial statements for additional information on our significant assumptions, judgments and interpretations associated with the accounting for income taxes and Note 22 to the financial statements for additional information on our tax examinations.

Liquidity and Capital Resources

Our liquidity and capital policies are established and maintained by senior management, with oversight by the Asset/Liability Management Committee and the Board of Directors ("Board"). Through various risk and control committees, senior management reviews business performance relative to these policies, monitors the availability of alternative sources of financing, and oversees the liquidity, interest rate and currency sensitivity of our asset and liability position. Our Treasury department, Firm Risk Committee, Asset/Liability Management Committee, and other committees and control groups assist in evaluating, monitoring and managing the impact that our business activities have on our balance sheet, liquidity and capital structure. Liquidity and capital matters are reported regularly to the Board and the Risk Committee of the Board.

Balance Sheet

We monitor and evaluate the composition and size of our balance sheet on a regular basis. Our balance sheet management process includes quarterly planning, business-specific thresholds, monitoring of business-specific usage versus key performance metrics and new business impact assessments.

We establish balance sheet thresholds at the consolidated and business segment levels. We monitor balance sheet utilization and review variances resulting from business activity and market fluctuations. On a regular basis, we review current performance versus established thresholds and assess the need to re-allocate our balance sheet based on business segment needs. We also monitor key metrics, including asset and liability size and capital usage.

Total Assets by Business Segment

	At December 31, 2022			
$ in millions	IS	WM	IM	Total
Assets				
Cash and cash equivalents	$ 88,362	$ 39,539	$ 226	$ 128,127
Trading assets at fair value	294,884	1,971	4,460	301,315
Investment securities	40,481	119,450	—	159,931
Securities purchased under agreements to resell	102,511	11,396	—	113,907
Securities borrowed	132,619	755	—	133,374
Customer and other receivables	47,515	29,620	1,405	78,540
Loans[1]	67,676	146,105	4	213,785
Other assets[2]	15,789	24,469	10,994	51,252
Total assets	$ 789,837	$ 373,305	$17,089	$ 1,180,231

	At December 31, 2021			
$ in millions	IS	WM	IM	Total
Assets				
Cash and cash equivalents	$ 91,251	$ 36,003	$ 471	$ 127,725
Trading assets at fair value	288,405	1,921	4,543	294,869
Investment securities	41,407	141,591	—	182,998
Securities purchased under agreements to resell	112,267	7,732	—	119,999
Securities borrowed	128,154	1,559	—	129,713
Customer and other receivables	57,009	37,643	1,366	96,018
Loans[1]	58,822	129,307	5	188,134
Other assets[2]	14,820	22,682	11,182	48,684
Total assets	$ 792,135	$ 378,438	$17,567	$ 1,188,140

1. Amounts include loans held for investment, net of ACL, and loans held for sale but exclude loans at fair value, which are included in Trading assets in the balance sheet (see Note 10 to the financial statements).
2. Other assets primarily includes Goodwill and Intangible assets, premises, equipment and software, ROU assets related to leases, other investments and deferred tax assets.

A substantial portion of total assets consists of cash and cash equivalents, liquid marketable securities and short-term receivables. In the Institutional Securities business segment, these arise from market-making, financing and prime brokerage activities, and in the Wealth Management business segment, these arise from banking activities, including management of the investment portfolio. Total assets of $1,180 billion at December 31, 2022 were relatively unchanged from $1,188 billion at December 31, 2021.

Liquidity Risk Management Framework

The primary goal of our Liquidity Risk Management Framework is to ensure that we have access to adequate funding across a wide range of market conditions and time horizons. The framework is designed to enable us to fulfill our financial obligations and support the execution of our business strategies.

The following principles guide our Liquidity Risk Management Framework:

- Sufficient Liquidity Resources should be maintained to cover maturing liabilities and other planned and contingent outflows;
- Maturity profile of assets and liabilities should be aligned, with limited reliance on short-term funding;
- Source, counterparty, currency, region and term of funding should be diversified; and
- Liquidity Stress Tests should anticipate, and account for, periods of limited access to funding.

The core components of our Liquidity Risk Management Framework are the Required Liquidity Framework, Liquidity Stress Tests and Liquidity Resources, which support our target liquidity profile.

Required Liquidity Framework

Our Required Liquidity Framework establishes the amount of liquidity we must hold in both normal and stressed environments to ensure that our financial condition and overall soundness are not adversely affected by an inability (or perceived inability) to meet our financial obligations in a timely manner. The Required Liquidity Framework considers the most constraining liquidity requirement to satisfy all regulatory and internal limits at a consolidated and legal entity level.

Liquidity Stress Tests

We use Liquidity Stress Tests to model external and intercompany liquidity flows across multiple scenarios and a range of time horizons. These scenarios contain various combinations of idiosyncratic and systemic stress events of different severity and duration. The methodology, implementation, production and analysis of our Liquidity Stress Tests are important components of the Required Liquidity Framework.

The assumptions used in our various Liquidity Stress Test scenarios include, but are not limited to, the following:

- No government support;
- No access to equity and limited access to unsecured debt markets;
- Repayment of all unsecured debt maturing within the stress horizon;
- Higher haircuts for and significantly lower availability of secured funding;
- Additional collateral that would be required by trading counterparties, certain exchanges and clearing organizations related to credit rating downgrades;
- Additional collateral that would be required due to collateral substitutions, collateral disputes and uncalled collateral;
- Discretionary unsecured debt buybacks;
- Drawdowns on lending commitments provided to third parties; and
- Client cash withdrawals and reduction in customer short positions that fund long positions.

Liquidity Stress Tests are produced and results are reported at different levels, including major operating subsidiaries and major currencies, to capture specific cash requirements and cash availability across the Firm, including a limited number of asset sales in a stressed environment. The Liquidity Stress Tests assume that subsidiaries will use their own liquidity first to fund their obligations before drawing liquidity from the Parent Company and that the Parent Company will support its subsidiaries and will not have access to subsidiaries' liquidity reserves. In addition to the assumptions underpinning the Liquidity Stress Tests, we take into consideration settlement risk related to intraday settlement and clearing of securities and financing activities.

At December 31, 2022 and December 31, 2021, we maintained sufficient Liquidity Resources to meet current and contingent funding obligations as modeled in our Liquidity Stress Tests.

Liquidity Resources

We maintain sufficient liquidity resources, which consist of HQLA and cash deposits with banks ("Liquidity Resources") to cover daily funding needs and to meet strategic liquidity targets sized by the Required Liquidity Framework and Liquidity Stress Tests. We actively manage the amount of our Liquidity Resources considering the following components: unsecured debt maturity profile; balance sheet size and composition; funding needs in a stressed environment, inclusive of contingent cash outflows; legal entity, regional and segment liquidity requirements; regulatory requirements; and collateral requirements.

The amount of Liquidity Resources we hold is based on our risk appetite and is calibrated to meet various internal and regulatory requirements and to fund prospective business activities. The Liquidity Resources are primarily held within the Parent Company and its major operating subsidiaries. The Total HQLA values in the tables immediately following are different from Eligible HQLA, which, in accordance with the LCR rule, also takes into account certain regulatory weightings and other operational considerations.

Liquidity Resources by Type of Investment

	Average Daily Balance Three Months Ended	
$ in millions	**December 31, 2022**	September 30, 2022
Cash deposits with central banks	**$ 58,818**	$ 61,447
Unencumbered HQLA securities[1]:		
U.S. government obligations	**136,020**	132,788
U.S. agency and agency mortgage-backed securities	**87,591**	89,279
Non-U.S. sovereign obligations[2]	**20,583**	15,812
Other investment grade securities	**694**	607
Total HQLA[1]	**$ 303,706**	$ 299,933
Cash deposits with banks (non-HQLA)	**8,544**	8,068
Total Liquidity Resources	**$ 312,250**	$ 308,001

1. HQLA is presented prior to applying weightings and includes all HQLA held in subsidiaries.
2. Primarily composed of unencumbered French, Japanese, U.K., German and Dutch government obligations.

Liquidity Resources by Bank and Non-Bank Legal Entities

	Average Daily Balance Three Months Ended	
$ in millions	**December 31, 2022**	September 30, 2022
Bank legal entities		
U.S.	**$ 134,845**	**$ 133,306**
Non-U.S.	**6,980**	**7,607**
Total Bank legal entities	**141,825**	**140,913**
Non-Bank legal entities		
U.S.:		
Parent Company	**56,111**	**54,189**
Non-Parent Company	**54,813**	**55,098**
Total U.S.	**110,924**	**109,287**
Non-U.S.	**59,501**	**57,801**
Total Non-Bank legal entities	**170,425**	**167,088**
Total Liquidity Resources	**$ 312,250**	**$ 308,001**

Liquidity Resources may fluctuate from period to period based on the overall size and composition of our balance sheet, the maturity profile of our unsecured debt and estimates of funding needs in a stressed environment, among other factors.

Regulatory Liquidity Framework

Liquidity Coverage Ratio and Net Stable Funding Ratio

We and our U.S. Bank Subsidiaries are required to maintain a minimum LCR and NSFR of 100%. The LCR requires that large banking organizations have sufficient Eligible HQLA to cover net cash outflows arising from significant stress over 30 calendar days, thus promoting the short-term resilience of the liquidity risk profile of banking organizations. In determining Eligible HQLA for LCR purposes, weightings (or asset haircuts) are applied to HQLA, and certain HQLA held in subsidiaries is excluded. The NSFR requires large banking organizations to maintain sufficiently stable sources of funding over a one-year time horizon.

As of December 31, 2022, we and our U.S. Bank Subsidiaries are compliant with the minimum LCR and NSFR requirements of 100%.

Liquidity Coverage Ratio

	Average Daily Balance Three Months Ended	
$ in millions	**December 31, 2022**	September 30, 2022
Eligible HQLA[1]		
Cash deposits with central banks	**$ 52,765**	$ 57,133
Securities[2]	**186,551**	183,102
Total Eligible HQLA[1]	**$ 239,316**	$ 240,235
LCR	**132 %**	136 %

1. Under the LCR rule, Eligible HQLA is calculated using weightings and excluding certain HQLA held in subsidiaries.
2. Primarily includes U.S. Treasuries, U.S. agency mortgage-backed securities, sovereign bonds and investment grade corporate bonds.

Funding Management

We manage our funding in a manner that reduces the risk of disruption to our operations. We pursue a strategy of diversification of secured and unsecured funding sources (by product, investor and region) and attempt to ensure that the tenor of our liabilities equals or exceeds the expected holding period of the assets being financed. Our goal is to achieve an optimal mix of durable secured and unsecured financing.

We fund our balance sheet on a global basis through diverse sources. These sources include our equity capital, borrowings, securities sold under agreements to repurchase, securities lending, deposits, letters of credit and lines of credit. We have active financing programs for both standard and structured products targeting global investors and currencies.

Secured Financing

The liquid nature of the marketable securities and short-term receivables arising principally from sales and trading

activities in the Institutional Securities business segment provides us with flexibility in managing the composition of our balance sheet. Secured financing investors principally focus on the quality of the eligible collateral posted. Accordingly, we actively manage our secured financings based on the quality of the assets being funded.

We have established longer tenor secured funding requirements for less liquid asset classes, for which funding may be at risk in the event of a market disruption. We define highly liquid assets as government-issued or government-guaranteed securities with a high degree of fundability and less liquid assets as those that do not meet these criteria.

To further minimize the refinancing risk of secured financing for less liquid assets, we have established concentration limits to diversify our investor base and reduce the amount of monthly maturities for secured financing of less liquid assets. As a component of the Liquidity Risk Management Framework, we hold a portion of our Liquidity Resources against the potential disruption to our secured financing capabilities.

We generally maintain a pool of liquid and easily fundable securities, which takes into account HQLA classifications consistent with LCR definitions, and other regulatory requirements, and provides a valuable future source of liquidity.

Collateralized Financing Transactions

$ in millions	At December 31, 2022	At December 31, 2021
Securities purchased under agreements to resell and Securities borrowed	$ 247,281	$ 249,712
Securities sold under agreements to repurchase and Securities loaned	$ 78,213	$ 74,487
Securities received as collateral[1]	$ 9,954	$ 10,504

$ in millions	Average Daily Balance Three Months Ended December 31, 2022	December 31, 2021
Securities purchased under agreements to resell and Securities borrowed	$ 261,627	$ 236,327
Securities sold under agreements to repurchase and Securities loaned	$ 77,268	$ 69,565

1. Included within Trading assets in the balance sheet.

See "Total Assets by Business Segment" herein for additional information on the assets shown in the previous table and Notes 2 and 9 to the financial statements for additional information on collateralized financing transactions.

In addition to the collateralized financing transactions shown in the previous table, we engage in financing transactions collateralized by customer-owned securities, which are segregated in accordance with regulatory requirements. Receivables under these financing transactions, primarily margin loans, are included in Customer and other receivables in the balance sheet, and payables under these financing transactions, primarily to prime brokerage customers, are included in Customer and other payables in the balance sheet.

Our risk exposure on these transactions is mitigated by collateral maintenance policies and the elements of our Liquidity Risk Management Framework.

Unsecured Financing

We view deposits and borrowings as stable sources of funding for unencumbered securities and non-security assets. Our unsecured financings include borrowings and certificates of deposit carried at fair value, which are primarily composed of: instruments whose payments and redemption values are linked to the performance of a specific index, a basket of stocks, a specific equity security, a commodity, a credit exposure or basket of credit exposures; and instruments with various interest rate-related features, including step-ups, step-downs and zero coupons. Also included are unsecured contracts which are not classified as OTC derivatives because they fail net investment criteria. As part of our asset/liability management strategy, when appropriate, we use derivatives to make adjustments to the interest rate risk profile of our borrowings (see Notes 7 and 14 to the financial statements).

Deposits

$ in millions	At December 31, 2022	At December 31, 2021
Savings and demand deposits:		
Brokerage sweep deposits[1]	$ 202,592	$ 298,352
Savings and other	117,356	34,395
Total Savings and demand deposits	319,948	332,747
Time deposits	36,698	14,827
Total[2]	$ 356,646	$ 347,574

1. Amounts represent balances swept from client brokerage accounts.
2. Excludes approximately $6 billion and $9 billion of off-balance sheet deposits at unaffiliated financial institutions as of December 31, 2022 and December 31, 2021, respectively. This client cash held by third parties is not reflected in our balance sheet and is not immediately available for liquidity purposes.

Deposits are primarily sourced from our Wealth Management clients and are considered to have stable, low-cost funding characteristics. The increase in total deposits in 2022 was primarily driven by higher Savings and other and Time deposits, partially offset by a reduction in Brokerage sweep deposits.

Borrowings by Remaining Maturity at December 31, 2022[1]

$ in millions	Parent Company	Subsidiaries	Total
Original maturities of one year or less	$ —	$ 4,191	$ 4,191
Original maturities greater than one year			
2023	$ 11,007	$ 7,903	$ 18,910
2024	19,618	10,224	29,842
2025	21,462	8,773	30,235
2026	23,622	5,376	28,998
2027	17,072	6,489	23,561
Thereafter	76,855	25,466	102,321
Total	$ 169,636	$ 64,231	$ 233,867
Total Borrowings	$ 169,636	$ 68,422	$ 238,058

1. Original maturity in the table is generally based on contractual final maturity. For borrowings with put options, remaining maturity represents the earliest put date.

Borrowings of $238 billion as of December 31, 2022 were relatively unchanged when compared with $233 billion at December 31, 2021.

We believe that accessing debt investors through multiple distribution channels helps provide consistent access to the unsecured markets. In addition, the issuance of borrowings with original maturities greater than one year allows us to reduce reliance on short-term credit sensitive instruments. Borrowings with original maturities greater than one year are generally managed to achieve staggered maturities, thereby mitigating refinancing risk, and to maximize investor diversification through sales to global institutional and retail clients across regions, currencies and product types.

The availability and cost of financing to us can vary depending on market conditions, the volume of certain trading and lending activities, our credit ratings and the overall availability of credit. We also engage in, and may continue to engage in, repurchases of our borrowings as part of our market-making activities.

For further information on Borrowings, see Note 14 to the financial statements.

Credit Ratings

We rely on external sources to finance a significant portion of our daily operations. Our credit ratings are one of the factors in the cost and availability of financing and can have an impact on certain trading revenues, particularly in those businesses where longer-term counterparty performance is a key consideration, such as certain OTC derivative transactions. When determining credit ratings, rating agencies consider both company-specific and industry-wide factors. See also "Risk Factors—Liquidity Risk."

Parent Company and U.S. Bank Subsidiaries Issuer Ratings at February 17, 2023

	Parent Company		
	Short-Term Debt	Long-Term Debt	Rating Outlook
DBRS, Inc.	**R-1 (middle)**	**A (high)**	**Stable**
Fitch Ratings, Inc.	**F1**	**A+**	**Stable**
Moody's Investors Service, Inc.	**P-1**	**A1**	**Stable**
Rating and Investment Information, Inc.	**a-1**	**A**	**Positive**
S&P Global Ratings	**A-2**	**A-**	**Stable**

	MSBNA		
	Term Debt	Term Debt	Rating Outlook
Fitch Ratings, Inc.	**F1+**	**AA-**	**Stable**
Moody's Investors Service, Inc.	**P-1**	**Aa3**	**Stable**
S&P Global Ratings	**A-1**	**A+**	**Stable**

	MSPBNA		
	Short-Term Debt	Long-Term Debt	Rating Outlook
Moody's Investors Service, Inc.	**P-1**	**Aa3**	**Stable**
S&P Global Ratings	**A-1**	**A+**	**Stable**

On May 17, 2022, S&P Global Ratings upgraded the issuer ratings of the Parent Company from BBB+ to A-, and revised the Parent Company outlook from positive to stable.

On November 4, 2022, Fitch Ratings, Inc. upgraded the issuer ratings of the Parent Company from A to A+, and MSBNA from A+ to AA-, and revised the Parent Company and MSBNA outlooks from positive to stable. Fitch Ratings, Inc. also upgraded the short-term rating of MSBNA from F1 to F1+.

On December 16, 2022, Rating and Investment Information, Inc. revised the Parent Company outlook from stable to positive.

Incremental Collateral or Terminating Payments

In connection with certain OTC derivatives and certain other agreements where we are a liquidity provider to certain financing vehicles associated with the Institutional Securities business segment, we may be required to provide additional collateral, immediately settle any outstanding liability balances with certain counterparties or pledge additional collateral to certain clearing organizations in the event of a future credit rating downgrade irrespective of whether we are in a net asset or net liability position. See Note 7 to the financial statements for additional information on OTC derivatives that contain such contingent features.

While certain aspects of a credit rating downgrade are quantifiable pursuant to contractual provisions, the impact it would have on our business and results of operations in future periods is inherently uncertain and would depend on a number of interrelated factors, including, among other things, the magnitude of the downgrade, the rating relative to peers, the rating assigned by the relevant agency before the downgrade, individual client behavior and future mitigating actions we might take. The liquidity impact of additional collateral requirements is included in our Liquidity Stress Tests.

Capital Management

We view capital as an important source of financial strength and actively manage our consolidated capital position based upon, among other things, business opportunities, risks, capital availability and rates of return together with internal capital policies, regulatory requirements and rating agency guidelines. In the future, we may expand or contract our capital base to address the changing needs of our businesses.

Common Stock Repurchases

in millions, except for per share data	**2022**	2021	2020
Number of shares	**113**	126	29
Average price per share	**$ 87.25**	$ 91.13	$ 46.01
Total	**$ 9,865**	$ 11,464	$ 1,347

For additional information on our common stock repurchases, see "Liquidity and Capital Resources—Regulatory Requirements—Capital Plans, Stress Tests and the Stress

Capital Buffer" herein and Note 18 to the financial statements.

For a description of our capital plan, see "Liquidity and Capital Resources—Regulatory Requirements—Capital Plans, Stress Tests and the Stress Capital Buffer" herein.

Common Stock Dividend Announcement

Announcement date	January 17, 2023
Amount per share	$0.775
Date paid	February 15, 2023
Shareholders of record as of	January 31, 2023

For additional information on our common stock dividends, see "Liquidity and Capital Resources—Regulatory Requirements—Capital Plans, Stress Tests and the Stress Capital Buffer" herein.

For additional information on our common stock and information on our preferred stock, see Note 18 to the financial statements.

Off-Balance Sheet Arrangements

We enter into various off-balance sheet arrangements, including through unconsolidated SPEs and lending-related financial instruments (*e.g.*, guarantees and commitments), primarily in connection with the Institutional Securities and Investment Management business segments.

We utilize SPEs primarily in connection with securitization activities. For information on our securitization activities, see Note 16 to the financial statements.

For information on our commitments, obligations under certain guarantee arrangements and indemnities, see Note 15 to the financial statements. For a further discussion of our lending commitments, see "Quantitative and Qualitative Disclosures about Risk—Credit Risk—Loans and Lending Commitments" herein.

Regulatory Requirements

Regulatory Capital Framework

We are an FHC under the Bank Holding Company Act of 1956, as amended ("BHC Act") and are subject to the regulation and oversight of the Federal Reserve. The Federal Reserve establishes capital requirements for us, including "well-capitalized" standards, and evaluates our compliance with such capital requirements. The OCC establishes similar capital requirements and standards for our U.S. Bank Subsidiaries. The regulatory capital requirements are largely based on the Basel III capital standards established by the Basel Committee and also implement certain provisions of the Dodd-Frank Act. For us to remain an FHC, we must remain well-capitalized in accordance with standards established by the Federal Reserve, and our U.S. Bank Subsidiaries must remain well-capitalized in accordance with standards established by the OCC. In addition, many of our regulated subsidiaries are subject to regulatory capital requirements, including regulated subsidiaries provisionally registered as swap dealers with the CFTC or conditionally registered as security-based swap dealers with the SEC or registered as broker-dealers or futures commission merchants. For additional information on regulatory capital requirements for our U.S. Bank Subsidiaries, as well as our subsidiaries that are Swap Entities, see Note 17 to the financial statements.

Regulatory Capital Requirements

We are required to maintain minimum risk-based and leverage-based capital and TLAC ratios. For additional information on TLAC, see "Total Loss-Absorbing Capacity, Long-Term Debt and Clean Holding Company Requirements" herein.

Risk-Based Regulatory Capital. Risk-based capital ratio requirements apply to Common Equity Tier 1 capital, Tier 1 capital and Total capital (which includes Tier 2 capital), each as a percentage of RWA, and consist of regulatory minimum required ratios plus our capital buffer requirement. Capital requirements require certain adjustments to, and deductions from, capital for purposes of determining these ratios.

Capital Buffer Requirements

	At December 31, 2022	At December 31, 2021	**At December 31, 2022** and December 31, 2021
	Standardized	Standardized	Advanced
Capital buffers			
Capital conservation buffer	**—**	—	**2.5%**
SCB[1]	**5.8%**	5.7%	**N/A**
G-SIB capital surcharge[2]	**3.0%**	3.0%	**3.0%**
CCyB[3]	**0%**	0%	**0%**
Capital buffer requirement	**8.8%**	8.7%	**5.5%**

1. For additional information on the SCB, see "Capital Plans, Stress Tests and the Stress Capital Buffer" herein.
2. For a further discussion of the G-SIB capital surcharge, see "G-SIB Capital Surcharge" herein.
3. The CCyB can be set up to 2.5% but is currently set by the Federal Reserve at zero.

The capital buffer requirement represents the amount of Common Equity Tier 1 capital we must maintain above the minimum risk-based capital requirements in order to avoid restrictions on our ability to make capital distributions, including the payment of dividends and the repurchase of stock, and to pay discretionary bonuses to executive officers. Our capital buffer requirement computed under the standardized approaches for calculating credit risk and market RWAs ("Standardized Approach") is equal to the sum of our SCB, G-SIB capital surcharge and CCyB, and our capital buffer requirement computed under the applicable advanced approaches for calculating credit risk, market risk and operational risk RWAs ("Advanced Approach") is equal to our 2.5% capital conservation buffer, G-SIB capital surcharge and CCyB.

Risk-Based Regulatory Capital Ratio Requirements

	Regulatory Minimum	At December 31, 2022 Standardized	At December 31, 2021 Standardized	At December 31, 2022 and December 31, 2021 Advanced
Required ratios[1]				
Common Equity Tier 1 capital ratio	**4.5%**	**13.3%**	13.2%	**10.0%**
Tier 1 capital ratio	**6.0%**	**14.8%**	14.7%	**11.5%**
Total capital ratio	**8.0%**	**16.8%**	16.7%	**13.5%**

1. Required ratios represent the regulatory minimum plus the capital buffer requirement.

Risk-Weighted Assets. RWA reflects both our on- and off-balance sheet risk, as well as capital charges attributable to the risk of loss arising from the following:

- Credit risk: The failure of a borrower, counterparty or issuer to meet its financial obligations to us;
- Market risk: Adverse changes in the level of one or more market prices, rates, spreads, indices, volatilities, correlations or other market factors, such as market liquidity; and
- Operational risk: Inadequate or failed processes or systems, from human factors or from external events (*e.g.*, fraud, theft, legal and compliance risks, cyber attacks or damage to physical assets).

Our risk-based capital ratios are computed under each of (i) the Standardized Approach and (ii) the Advanced Approach. The credit risk RWA calculations between the two approaches differ in that the Standardized Approach requires calculation of RWA using prescribed risk weights and exposure methodologies, whereas the Advanced Approach utilizes models to calculate exposure amounts and risk weights. At December 31, 2022 and December 31, 2021, the differences between the actual and required ratios were lower under the Standardized Approach.

Leverage-Based Regulatory Capital. Leverage-based capital requirements include a minimum Tier 1 leverage ratio of 4%, a minimum SLR of 3% and an enhanced SLR capital buffer of at least 2%.

CECL Deferral. As of December 31, 2021, our risk-based and leverage-based capital amounts and ratios, as well as RWA, adjusted average assets and supplementary leverage exposure were calculated excluding the effect of the adoption of CECL based on the Firm's election to defer this effect over a five-year transition period that began on January 1, 2020. In 2022 the deferral impacts began to phase in at 25% per year and will become fully phased-in beginning in 2025.

Regulatory Capital Ratios

$ in millions	Required Ratio[1]	At December 31, 2022	Required Ratio[1]	At December 31, 2021
Risk-based capital—Standardized				
Common Equity Tier 1 capital		**$ 68,670**		$ 75,742
Tier 1 capital		**77,191**		83,348
Total capital		**86,575**		93,166
Total RWA		**447,849**		471,921
Common Equity Tier 1 capital ratio	**13.3%**	**15.3%**	13.2%	16.0%
Tier 1 capital ratio	**14.8%**	**17.2%**	14.7%	17.7%
Total capital ratio	**16.8%**	**19.3%**	16.7%	19.7%

$ in millions	Required Ratio[1]	At December 31, 2022	At December 31, 2021
Risk-based capital—Advanced			
Common Equity Tier 1 capital		**$ 68,670**	$ 75,742
Tier 1 capital		**77,191**	83,348
Total capital		**86,159**	92,927
Total RWA		**438,806**	435,749
Common Equity Tier 1 capital ratio	**10.0%**	**15.6%**	17.4%
Tier 1 capital ratio	**11.5%**	**17.6%**	19.1%
Total capital ratio	**13.5%**	**19.6%**	21.3%

$ in millions	Required Ratio[1]	At December 31, 2022	At December 31, 2021
Leverage-based capital			
Adjusted average assets[2]		**$ 1,150,772**	$ 1,169,939
Tier 1 leverage ratio	**4.0%**	**6.7%**	7.1%
Supplementary leverage exposure[3]		**$ 1,399,403**	$ 1,476,962
SLR	**5.0%**	**5.5%**	5.6%

1. Required ratios are inclusive of any buffers applicable as of the date presented.
2. Adjusted average assets represents the denominator of the Tier 1 leverage ratio and is composed of the average daily balance of consolidated on-balance sheet assets for the quarters ending on the respective balance sheet dates, reduced by disallowed goodwill, intangible assets, investments in covered funds, defined benefit pension plan assets, after-tax gain on sale from assets sold into securitizations, investments in our own capital instruments, certain deferred tax assets and other capital deductions.
3. Supplementary leverage exposure is the sum of Adjusted average assets used in the Tier 1 leverage ratio and other adjustments, primarily: (i) for derivatives, potential future exposure and the effective notional principal amount of sold credit protection offset by qualifying purchased credit protection; (ii) the counterparty credit risk for repo-style transactions; and (iii) the credit equivalent amount for off-balance sheet exposures.

Regulatory Capital

$ in millions	At December 31, 2022	At December 31, 2021	Change
Common Equity Tier 1 capital			
Common stock and surplus	**$ 2,782**	$ 11,361	**$ (8,579)**
Retained earnings	**95,047**	89,679	**5,368**
AOCI	**(6,253)**	(3,102)	**(3,151)**
Regulatory adjustments and deductions:			
Net goodwill	**(16,393)**	(16,641)	**248**
Net intangible assets	**(6,048)**	(6,704)	**656**
Other adjustments and deductions[1]	**(465)**	1,149	**(1,614)**
Total Common Equity Tier 1 capital	**$ 68,670**	$ 75,742	**$ (7,072)**
Additional Tier 1 capital			
Preferred stock	**$ 8,750**	$ 7,750	**$ 1,000**
Noncontrolling interests	**552**	562	**(10)**
Additional Tier 1 capital	**$ 9,302**	$ 8,312	**$ 990**
Deduction for investments in covered funds	**(781)**	(706)	**(75)**
Total Tier 1 capital	**$ 77,191**	$ 83,348	**$ (6,157)**
Standardized Tier 2 capital			
Subordinated debt	**$ 7,846**	$ 8,609	**$ (763)**
Eligible ACL	**1,613**	1,155	**458**
Other adjustments and deductions	**(75)**	54	**(129)**
Total Standardized Tier 2 capital	**$ 9,384**	$ 9,818	**$ (434)**
Total Standardized capital	**$ 86,575**	$ 93,166	**$ (6,591)**
Advanced Tier 2 capital			
Subordinated debt	**$ 7,846**	$ 8,609	**$ (763)**
Eligible credit reserves	**1,197**	916	**281**
Other adjustments and deductions	**(75)**	54	**(129)**
Total Advanced Tier 2 capital	**$ 8,968**	$ 9,579	**$ (611)**
Total Advanced capital	**$ 86,159**	$ 92,927	**$ (6,768)**

1. Other adjustments and deductions used in the calculation of Common Equity Tier 1 capital primarily includes net after-tax DVA, the credit spread premium over risk-free rate for derivative liabilities, defined benefit pension plan assets, after-tax gain on sale from assets sold into securitizations, investments in our own capital instruments and certain deferred tax assets.

RWA Rollforward

$ in millions	Standardized	Advanced
Credit risk RWA		
Balance at December 31, 2021	$ 416,502	$ 285,247
Change related to the following items:		
Derivatives	**(21,332)**	**1,738**
Securities financing transactions	**(8,217)**	**24**
Investment securities	**(2,853)**	**(8,348)**
Commitments, guarantees and loans	**12,698**	**4,881**
Equity investments	**(3,738)**	**(3,909)**
Other credit risk	**4,215**	**6,005**
Total change in credit risk RWA	**$ (19,227)**	**$ 391**
Balance at December 31, 2022	**$ 397,275**	**$ 285,638**
Market risk RWA		
Balance at December 31, 2021	$ 55,419	$ 55,419
Change related to the following items:		
Regulatory VaR	**3,700**	**3,700**
Regulatory stressed VaR	**1,585**	**1,585**
Incremental risk charge	**(4,641)**	**(4,641)**
Comprehensive risk measure	**(281)**	**(292)**
Specific risk	**(5,208)**	**(5,208)**
Total change in market risk RWA	**$ (4,845)**	**$ (4,856)**
Balance at December 31, 2022	**$ 50,574**	**$ 50,563**
Operational risk RWA		
Balance at December 31, 2021	N/A	$ 95,083
Change in operational risk RWA	**N/A**	**7,522**
Balance at December 31, 2022	**N/A**	**$ 102,605**
Total RWA	**$ 447,849**	**$ 438,806**

Regulatory VaR—VaR for regulatory capital requirements

In 2022, Credit risk RWA decreased under the Standardized Approach but was relatively unchanged under the Advanced Approach. Under the Standardized Approach, the decrease was primarily driven by lower equity, commodities, and credit Derivatives as well as lower Securities financing transactions from margin lending, partially offset by lending growth. Under the Advanced Approach, lending growth, higher foreign exchange Derivatives exposures and higher other assets exposures were offset by lower Investment securities and Equity Investments.

Market risk RWA decreased in 2022 under both the Standardized and Advanced Approaches primarily driven by lower Incremental Risk Charge driven by exposure reduction in the Fixed Income business and lower Specific risk securitization and non-securitization standardized charges, partially offset by higher Regulatory VaR.

The increase in Operational risk RWA in 2022 reflects higher legal expenses and execution-related losses.

G-SIB Capital Surcharge

We and other U.S. G-SIBs are subject to an additional risk-based capital surcharge, the G-SIB capital surcharge, which must be satisfied using Common Equity Tier 1 capital and which functions as an extension of the capital conservation buffer. The surcharge is calculated based on the G-SIB's size, interconnectedness, cross-jurisdictional activity, and

complexity and substitutability ("Method 1") or use of short-term wholesale funding ("Method 2"), whichever is higher.

Total Loss-Absorbing Capacity, Long-Term Debt and Clean Holding Company Requirements

The Federal Reserve has established external TLAC, long-term debt ("LTD") and clean holding company requirements for top-tier BHCs of U.S. G-SIBs ("covered BHCs"), including the Parent Company. These requirements are designed to ensure that covered BHCs will have enough loss-absorbing resources at the point of failure to be recapitalized through the conversion of eligible LTD to equity or otherwise by imposing losses on eligible LTD or other forms of TLAC where an SPOE resolution strategy is used (see "Business—Supervision and Regulation—Financial Holding Company—Resolution and Recovery Planning" and "Risk Factors—Legal, Regulatory and Compliance Risk").

These TLAC and eligible LTD requirements include various restrictions, such as requiring eligible LTD to: be issued by the covered BHC; be unsecured; have a maturity of one year or more from the date of issuance; and not contain certain embedded features, such as a principal or redemption amount subject to reduction based on the performance of an asset, entity or index, or a similar feature. In addition, the requirements provide permanent grandfathering for debt instruments issued prior to December 31, 2016 that would be eligible LTD but for having impermissible acceleration clauses or being governed by foreign law.

A covered BHC is also required to maintain minimum external TLAC equal to the greater of (i) 18% of total RWA or (ii) 7.5% of its total leverage exposure (the denominator of its SLR). Covered BHCs must also meet a minimum external LTD requirement equal to the greater of (i) total RWA multiplied by the sum of 6% plus the higher of the Method 1 or Method 2 G-SIB capital surcharge applicable to the Parent Company or (ii) 4.5% of its total leverage exposure.

The final rule imposes TLAC buffer requirements on top of both the risk-based and leverage exposure-based external TLAC minimum requirements. The risk-based TLAC buffer is equal to the sum of 2.5%, our Method 1 G-SIB surcharge and the CCyB, if any, as a percentage of total RWA. The leverage exposure-based TLAC buffer is equal to 2% of our total leverage exposure. Failure to maintain the buffers would result in restrictions on our ability to make capital distributions, including the payment of dividends and the repurchase of stock, and to pay discretionary bonuses to executive officers.

Required and Actual TLAC and Eligible LTD Ratios

			Actual Amount/Ratio	
$ in millions	Regulatory Minimum	Required Ratio[1]	**At December 31, 2022**	At December 31, 2021
External TLAC[2]			**$ 245,951**	$ 235,681
External TLAC as a % of RWA	**18.0%**	**21.5%**	**54.9%**	49.9%
External TLAC as a % of leverage exposure	**7.5%**	**9.5%**	**17.6%**	16.0%
Eligible LTD[3]			**$ 159,444**	$ 144,659
Eligible LTD as a % of RWA	**9.0%**	**9.0%**	**35.6%**	30.7%
Eligible LTD as a % of leverage exposure	**4.5%**	**4.5%**	**11.4%**	9.8%

1. Required ratios are inclusive of applicable buffers.
2. External TLAC consists of Common Equity Tier 1 capital and Additional Tier 1 capital (each excluding any noncontrolling minority interests), as well as eligible LTD.
3. Consists of TLAC-eligible LTD reduced by 50% for amounts of unpaid principal due to be paid in more than one year but less than two years from each respective balance sheet date.

Furthermore, under the clean holding company requirements, a covered BHC is prohibited from incurring any external debt with an original maturity of less than one year or certain other liabilities, regardless of whether the liabilities are fully secured or otherwise senior to eligible LTD, or entering into certain other prohibited transactions. Certain other external liabilities, including those with certain embedded features noted above, are subject to a cap equal to 5% of the covered BHC's outstanding external TLAC amount. Additionally, as of April 1, 2021, we and our U.S. Bank Subsidiaries are required to make certain deductions from regulatory capital for investments in certain unsecured debt instruments (including eligible LTD in the TLAC framework) issued by the Parent Company or other G-SIBs.

We are in compliance with all TLAC requirements as of December 31, 2022 and December 31, 2021.

Capital Plans, Stress Tests and the Stress Capital Buffer

The Federal Reserve has capital planning and stress test requirements for large BHCs, which form part of the Federal Reserve's annual CCAR framework.

We must submit, on at least an annual basis, a capital plan to the Federal Reserve, taking into account the results of separate annual stress tests designed by us and the Federal Reserve, so that the Federal Reserve may assess our systems and processes that incorporate forward-looking projections of revenues and losses to monitor and maintain our internal capital adequacy. As banks with less than $250 billion of total assets, our U.S. Bank Subsidiaries are not subject to company-run stress test regulatory requirements.

The capital plan must include a description of all planned capital actions over a nine-quarter planning horizon, including any issuance or redemption of a debt or equity capital instrument, any capital distribution (*i.e.*, payments of dividends or stock repurchases) and any similar action that the Federal Reserve determines could impact our consolidated

capital. The capital plan must include a discussion of how we will maintain capital above the minimum regulatory capital ratios and how we will serve as a source of strength to our U.S. Bank Subsidiaries under supervisory stress scenarios. In addition, the Federal Reserve has issued guidance setting out its heightened expectations for capital planning practices at certain large financial institutions, including us.

As part of its annual capital supervisory stress testing process, the Federal Reserve determines an SCB for each large BHC, including us. The SCB applies only with respect to Standardized Approach risk-based capital requirements and replaced the Common Equity Tier 1 capital conservation buffer of 2.5%. The SCB is the greater of (i) the maximum decline in our Common Equity Tier 1 capital ratio under the severely adverse scenario over the supervisory stress test measurement period plus the sum of the four quarters of planned common stock dividends divided by the projected RWAs from the quarter in which the Firm's projected Common Equity Tier 1 capital ratio reaches its minimum in the supervisory stress test and (ii) 2.5%.

The supervisory stress test assumes that BHCs generally maintain a constant level of assets and RWAs throughout the projection period.

A firm's SCB is subject to revision each year, taking effect from October 1 to reflect the results of the Federal Reserve's annual supervisory stress test. The Federal Reserve has discretion to recalculate a firm's SCB outside of the October 1 annual cycle and to require approval for certain actions, in some circumstances. The Federal Reserve also has the authority to impose restrictions on capital actions as a supervisory matter.

For the 2022 capital planning and stress test cycle, we submitted our capital plan and company-run stress test results to the Federal Reserve on April 5, 2022. On June 23, 2022, the Federal Reserve published summary results of its supervisory stress tests of each large BHC, in which the projected decline in our Common Equity Tier 1 ratio in the severely adverse scenario improved from the prior annual supervisory stress test, from 4.7% to 4.6%. Following the publication of the supervisory stress test results, and as a result of the increase in our common stock dividend and the resulting dividend add-on, we announced that our SCB will be 5.8% from October 1, 2022 through September 30, 2023. Together with other features of the regulatory capital framework, this SCB results in an aggregate Standardized Approach Common Equity Tier 1 ratio of 13.3%.

We also disclosed a summary of the results of our company-run stress tests on our Investor Relations website and increased our quarterly common stock dividend to $0.775 per share from $0.70, beginning with the common stock dividend announced on July 14, 2022. Additionally, our Board of Directors approved a new multi-year repurchase authorization of up to $20 billion of outstanding common stock, without a set expiration date, beginning in the third quarter of 2022, which will be exercised from time to time as conditions warrant.

Attribution of Average Common Equity According to the Required Capital Framework

Our required capital ("Required Capital") estimation is based on the Required Capital framework, an internal capital adequacy measure. Common equity attribution to the business segments is based on capital usage calculated under the Required Capital framework, as well as each business segment's relative contribution to our total Required Capital.

The Required Capital framework is a risk-based and leverage-based capital measure, which is compared with our regulatory capital to ensure that we maintain an amount of going concern capital after absorbing potential losses from stress events, where applicable, at a point in time. The amount of capital allocated to the business segments is generally set at the beginning of each year and remains fixed throughout the year until the next annual reset unless a significant business change occurs (*e.g.*, acquisition or disposition). We define the difference between our total average common equity and the sum of the average common equity amounts allocated to our business segments as Parent common equity. We generally hold Parent common equity for prospective regulatory requirements, organic growth, potential future acquisitions and other capital needs.

Average Common Equity Attribution under the Required Capital Framework[1]

$ in billions	2022	2021	2020
Institutional Securities	$ **48.8**	$ 43.5	$ 42.8
Wealth Management[2]	**31.0**	28.6	20.8
Investment Management[3]	**10.6**	8.8	2.6
Parent	**3.5**	16.2	14.0
Total	$ **93.9**	$ 97.1	$ 80.2

1. The attribution of average common equity to the business segments is a non-GAAP financial measure. See "Selected Non-GAAP Financial Information" herein.
2. The total average common equity and the allocation to the Wealth Management business segment in 2022 and 2021 reflect the E*TRADE acquisition on October 2, 2020.
3. The total average common equity and the allocation to the Investment Management business segment in 2021 reflect the Eaton Vance acquisition on March 1, 2021.

We continue to evaluate our Required Capital framework with respect to the impact of evolving regulatory requirements, as appropriate.

Resolution and Recovery Planning

We are required to submit once every two years to the Federal Reserve and the FDIC a resolution plan that describes our strategy for a rapid and orderly resolution under the U.S. Bankruptcy Code in the event of our material financial distress or failure. We submitted our 2021 targeted resolution plan on June 30, 2021. In November 2022, we received joint feedback on our 2021 resolution plan from the Federal Reserve and the FDIC ("Agencies"). The feedback indicated that there are no shortcomings or deficiencies in our 2021 resolution plan and that we had successfully addressed a prior

shortcoming identified by the Agencies in the review of our 2019 resolution plan. For more information about resolution planning requirements, see "Business—Supervision and Regulation—Financial Holding Company—Resolution and Recovery Planning."

As described in our most recent resolution plan, our preferred resolution strategy is an SPOE strategy. In line with our SPOE strategy, the Parent Company has transferred, and has agreed to transfer on an ongoing basis, certain assets to its wholly owned, direct subsidiary Morgan Stanley Holdings LLC (the "Funding IHC"). In addition, the Parent Company has entered into an amended and restated support agreement with its material entities (including the Funding IHC) and certain other subsidiaries. In the event of a resolution scenario, the Parent Company would be obligated to contribute all of its contributable assets to our supported entities and/or the Funding IHC. The Funding IHC would be obligated to provide capital and liquidity, as applicable, to our supported entities. The combined implication of the SPOE resolution strategy and the requirement to maintain certain levels of TLAC is that losses in resolution would be imposed on the holders of eligible long-term debt and other forms of eligible TLAC issued by the Parent Company before any losses are imposed on creditors of our supported entities and without requiring taxpayer or government financial support.

The obligations of the Parent Company and the Funding IHC under the amended and restated support agreement are in most cases secured on a senior basis by the assets of the Parent Company (other than shares in subsidiaries of the Parent Company and certain other assets) and the assets of the Funding IHC. As a result, claims of our supported entities, including the Funding IHC, with respect to the secured assets, are effectively senior to unsecured obligations of the Parent Company.

For more information about resolution and recovery planning requirements and our activities in these areas, including the implications of such activities in a resolution scenario, see "Business—Supervision and Regulation—Financial Holding Company—Resolution and Recovery Planning" and "Risk Factors—Legal, Regulatory and Compliance Risk."

Regulatory Developments and Other Matters

Covered Fund Restrictions under the Volcker Rule

The Volcker Rule prohibits certain investments and relationships by banking entities with covered funds, as defined in the Volcker Rule. During the current quarter, we have continued our assessment of conformance options permitted under the Volcker Rule with respect to certain legacy illiquid funds for which we previously received a conformance extension until July 21, 2023. These conformance options include, but are not limited to, restructuring our investments, selling a portion or all of our interests in certain legacy illiquid funds and relying on other applicable exemptions and exclusions under the Volcker Rule. As of December 31, 2022, the carrying value of our investments in those legacy illiquid funds approximated $230 million.

Replacement of London Interbank Offered Rate and Replacement or Reform of Other Interest Rate Benchmarks

Central banks around the world, including the Federal Reserve, have sponsored initiatives in recent years to replace LIBOR and replace or reform certain other interest rate benchmarks (collectively, the "IBORs"). A transition away from use of the IBORs to alternative rates and other potential interest rate benchmark reforms is underway and is a multi-year initiative.

The publication of most non-U.S. dollar LIBOR rates ceased as of the end of December 2021, although certain Sterling and Yen LIBOR rates have been published for a limited period following this date on the basis of a "synthetic" methodology (known as "synthetic LIBOR"). The synthetic Yen LIBOR rates ceased as of the end of December 2022 and the U.K. Financial Conduct Authority ("UK FCA"), which regulates the publisher of LIBOR (ICE Benchmark Administration), has announced that publication of the one- and six-month tenors of synthetic Sterling LIBOR will cease at the end of March 2023 and the three-month synthetic Sterling LIBOR at the end of March 2024.

U.S. dollar LIBOR rates are expected to cease being published as of the end of June 2023. On March 15, 2022 the U.S. enacted federal legislation that is intended to minimize legal and economic uncertainty following U.S. dollar LIBOR's cessation by replacing LIBOR references in certain U.S. law-governed contracts under certain circumstances with a SOFR-based rate identified in a Federal Reserve rule plus a statutory spread adjustment. While some states have already adopted LIBOR legislation, the federal legislation expressly preempts any provision of any state or local law, statute, rule, regulation or standard. In addition, the UK FCA is considering the continued publication of the one-, three- and six-month tenors of U.S. dollar LIBOR on a synthetic basis until the end of September 2024. This may result in certain non-U.S. law-governed contracts and U.S. law-governed contracts not covered by the federal legislation to remain on synthetic U.S. dollar LIBOR until the end of this period.

As of December 31, 2022, our LIBOR-referenced contracts were primarily concentrated in derivative contracts and, to a lesser extent, loans, floating rate notes, preferred shares, securitizations and mortgages. A significant majority of our derivative contracts, and a majority of our non-derivative contracts, contain fallback provisions or otherwise have an expected path that will allow for the transition to an alternative reference rate upon the cessation of the applicable LIBOR rate.

While we have made substantial progress in the transition away from the IBORs, we nonetheless currently remain party to a significant number of U.S. dollar LIBOR-linked

contracts. For the limited number of U.S. dollar LIBOR-linked contracts without a current market standard fallback, or to which the federal legislation does not apply, we are actively developing appropriate transition plans in light of the planned June 30, 2023 cessation date for the remaining U.S. dollar LIBOR tenors.

Our IBOR transition plan is overseen by a global steering committee, with senior management oversight, and we continue to execute against our Firm-wide IBOR transition plan to complete the transition to alternative reference rates.

See also "Risk Factors—Risk Management" for a further discussion of risks related to the planned replacement of the IBORs and/or reform of interest rate benchmarks.

Quantitative and Qualitative Disclosures about Risk

Risk Management

Overview

Risk is an inherent part of our businesses and activities. We believe effective risk management is vital to the success of our business activities. Accordingly, we have an Enterprise Risk Management ("ERM") framework to integrate the diverse roles of risk management into a holistic enterprise structure and to facilitate the incorporation of risk assessment into decision-making processes across the Firm.

We have policies and procedures in place to identify, measure, monitor, escalate, mitigate and control the principal risks involved in the activities of the Institutional Securities, Wealth Management and Investment Management business segments, as well as at the Parent Company level. The principal risks involved in our business activities are both financial and non-financial and include market (including non-trading risks), credit, liquidity, model, operational, compliance, cybersecurity, strategic, reputational and conduct risk. Strategic risk is integrated into our business planning, embedded in the evaluation of all principal risks and overseen by the Board.

The cornerstone of our risk management philosophy is the pursuit of risk-adjusted returns through prudent risk taking that protects our capital base and franchise. This philosophy is implemented through the ERM framework. Five key principles underlie this philosophy: integrity, comprehensiveness, independence, accountability and transparency. To help ensure the efficacy of risk management, which is an essential component of our reputation, senior management requires thorough and frequent reporting and the appropriate escalation of risk matters. The fast-paced, complex and constantly evolving nature of global financial markets requires us to maintain a risk management culture that is incisive, knowledgeable about specialized products and markets, and subject to ongoing review and enhancement.

Our risk appetite defines the aggregate level and types of risk that the Firm is willing to accept to achieve its business objectives, taking into account the interests of clients and fiduciary duties to shareholders, as well as capital and other regulatory requirements. This risk appetite is embedded in our risk culture and linked to our short-term and long-term strategic, capital and financial plans, as well as compensation programs. This risk appetite and the related Board-level risk limits and risk tolerance statements are reviewed and approved by the Risk Committee of the Board ("BRC") and the Board on at least an annual basis.

Risk Governance Structure

Risk management at the Firm requires independent Firm-level oversight, accountability of our business divisions, and effective communication of risk matters across the Firm, to senior management and ultimately to the Board. Our risk governance structure is set forth in the following chart and also includes risk managers, committees, and groups within and across business segments and operating legal entities. The ERM framework, composed of independent but complementary entities, facilitates efficient and comprehensive supervision of our risk exposures and processes.

RRP—Resolution and Recovery Planning

1. Committees include the Capital Commitment Committee, Global Large Loan Committee, Equity Underwriting Committee, Leveraged Finance Underwriting Committee and Municipal Capital Commitment Committee.
2. Committees include the Securities Risk Committee, Wealth Management Risk Committee and Investment Management Risk Committee.

Morgan Stanley Board of Directors

The Board has oversight of the ERM framework and is responsible for helping to ensure that our risks are managed in a sound manner. The Board has authorized the committees within the ERM framework to help facilitate our risk oversight responsibilities. As set forth in our Corporate Governance Policies, the Board also oversees, and receives reports on, our financial performance, strategy and business plans, as well as our practices and procedures relating to reputational and franchise risk, and culture, values and conduct.

Risk Committee of the Board

The BRC assists the Board in its oversight of the ERM framework; oversees major risk exposures of the Firm, including market, credit, model and liquidity risk, against established risk measurement methodologies and the steps management has taken to monitor and control such exposures; oversees our risk appetite statement, including risk limits and tolerances; reviews capital, liquidity and funding strategy and related guidelines and policies; reviews the contingency funding plan and capital planning process; oversees our significant risk management and risk assessment guidelines and policies; oversees the performance of the Chief Risk Officer; reviews reports from our Strategic Transactions Committee, CCAR Committee and RRP Committee; reviews new product risk, emerging risks, climate risk and regulatory matters; and reviews the Internal Audit Department reports on the assessment of the risk management, liquidity and capital functions. The BRC reports to the Board on a regular basis and coordinates with the Board and other Board committees with respect to oversight of risk management and risk assessment guidelines.

Audit Committee of the Board

The Audit Committee of the Board (“BAC”) oversees the integrity of our financial statements, compliance with legal and regulatory requirements, and system of internal controls; oversees risk management and risk assessment guidelines in coordination with the Board and other Board committees; reviews the major legal, compliance and conduct risk exposures of the Firm and the steps management has taken to monitor and control such exposures; selects, determines the fees, evaluates and, when appropriate, replaces the independent auditor; oversees the qualifications, independence and performance of our independent auditor and pre-approves audit and permitted non-audit services; oversees the performance of our Chief Audit Officer; and, after review, recommends to the Board the acceptance and inclusion of the annual audited financial statements in the Firm’s annual report on Form 10-K. The BAC reports to the Board on a regular basis.

Operations and Technology Committee of the Board

The Operations and Technology Committee of the Board (“BOTC”) oversees our operations and technology strategy and significant investments in support of such strategy; oversees operations, technology and operational risk, including information security, fraud, vendor, data protection, privacy, business continuity and resilience, cybersecurity risks and the steps management has taken to monitor and control such exposures; and reviews risk management and risk assessment guidelines in coordination with the Board and other Board committees, and policies regarding operations, technology and operational risk. The BOTC reports to the Board on a regular basis.

Firm Risk Committee

The Board has also authorized the Firm Risk Committee (“FRC”), a management committee appointed and co-chaired by the Chief Executive Officer and Chief Risk Officer, which includes the most senior officers of the Firm from the business, independent risk functions and control groups, to help oversee the ERM framework. The FRC’s responsibilities include: oversight of our risk management principles, procedures and limits; the monitoring of capital levels and material market, credit, model, operational, liquidity, legal, compliance and reputational risk matters, and other risks, as appropriate; and the steps management has taken to monitor and manage such risks. The FRC also establishes and communicates risk tolerance, including aggregate Firm limits and tolerances, as appropriate. The Governance Process Review Subcommittee of the FRC oversees governance and process issues on behalf of the FRC. The FRC reports to the Board, the BAC, the BOTC and the BRC through the Chief Risk Officer, Chief Financial Officer, Chief Legal Officer, and Head of Non-Financial Risk.

Functional Risk and Control Committees

Functional risk and control committees and other committees within the ERM framework facilitate efficient and comprehensive supervision of our risk exposures and processes.

Each business segment has a risk committee that is responsible for helping to ensure that the business segment, as applicable, adheres to established limits for market, credit, operational and other risks; implements risk measurement, monitoring, and management policies, procedures, controls and systems that are consistent with the risk framework established by the FRC; and reviews, on a periodic basis, our aggregate risk exposures, risk exception experience, and the efficacy of our risk identification, measurement, monitoring and management policies and procedures, and related controls.

Chief Risk Officer

The Chief Risk Officer, who is independent of business units, reports to the BRC and the Chief Executive Officer. The Chief Risk Officer oversees compliance with our risk limits; approves exceptions to our risk limits; independently reviews material market, credit, model and liquidity risks; and reviews results of risk management processes with the Board, the BRC, the BOTC and the BAC, as appropriate. The Chief Risk Officer also coordinates with the Chief Financial Officer regarding capital and liquidity management and works with the Compensation, Management Development and Succession Committee of the Board to help ensure that the structure and design of incentive compensation arrangements do not encourage unnecessary and excessive risk taking.

Independent Risk Management Functions

The Financial Risk Management functions (Market Risk, Credit Risk, Model Risk and Liquidity Risk Management departments) and Non-Financial Risk Management functions (Compliance, Global Financial Crimes, and Operational Risk departments) are independent of our business units and report to the Chief Risk Officer and Head of Non-Financial Risk, respectively. These functions assist senior management and the FRC in monitoring and controlling our risk through a number of control processes. Each function maintains its own risk governance structure with specified individuals and committees responsible for aspects of managing risk. Further discussion about the responsibilities of the risk management functions may be found under "Market Risk," "Credit Risk," "Operational Risk," "Model Risk" and "Liquidity Risk" and "Legal and Compliance Risk" herein.

Support and Control Groups

Our support and control groups include, but are not limited to, Legal, the Finance Division, Technology Division, Operations Division, the Human Resources Department, Corporate Services, and Firm Strategy and Execution. Our support and control groups coordinate with the business segment control groups to review the risk monitoring and risk management policies and procedures relating to, among other things, controls over financial reporting and disclosure; each business segment's market, credit and operational risk profile; liquidity risks; model risks; sales practices; reputational, legal enforceability, compliance, conduct and regulatory risk; and technological risks. Participation by the senior officers of the Firm and business segment control groups helps ensure that risk policies and procedures, exceptions to risk limits, new products and business ventures, and transactions with risk elements undergo thorough review.

Internal Audit Department

The Internal Audit Department ("IAD") independently assesses the Firm's risk management processes and controls using methodology developed from professional auditing standards and regulatory guidance. IAD undertakes these responsibilities through periodic reviews of our business activities, operations and systems, as well as special investigations and retrospective reviews that may be specifically requested by the BAC or management. In addition to regular reports to the BAC, the Chief Audit Officer, who reports functionally to the BAC and administratively to the Chief Executive Officer, periodically reports to the BRC and BOTC on various matters of risks and controls.

Culture, Values and Conduct of Employees

Employees of the Firm are accountable for conducting themselves in accordance with our core values: *Put Clients First, Do the Right Thing, Lead with Exceptional Ideas, Commit to Diversity and Inclusion,* and *Give Back*. We are committed to reinforcing and confirming adherence to our core values through our governance framework, tone from the top, management oversight, risk management and controls, and three lines of defense structure (business, control functions such as Risk Management and Compliance, and Internal Audit).

The Board is responsible for overseeing the Firm's practices and procedures relating to culture, values and conduct, as set forth in the Firm's Corporate Governance Policies. Our Culture, Values and Conduct Committee, along with the Compliance and Conduct Risk Committee, are the senior management committees that oversee the Firmwide culture, values and conduct program and report regularly to the Board. A fundamental building block of this program is the Firm's Code of Conduct, which establishes standards for employee conduct that further reinforce the Firm's commitment to integrity and ethical conduct. Every new hire and every employee annually is required to certify to their understanding of and adherence to the Code of Conduct. The Firm's Global Conduct Risk Management Policy also sets out a consistent global framework for managing Conduct Risk (*i.e.*, the risk arising from misconduct by employees or contingent workers) and Conduct Risk incidents at the Firm.

The employee annual performance review process includes evaluation of employee conduct related to risk management practices and the Firm's expectations. We also have several mutually reinforcing processes to identify employee conduct that may have an impact on employment status, current year compensation and/or prior year compensation. For example, the Global Incentive Compensation Discretion Policy sets forth standards for managers when making annual compensation decisions and specifically provides that managers must consider whether their employees effectively managed and/or supervised risk control practices during the performance year. Management committees from control functions periodically meet to discuss employees whose conduct is not in line with our expectations. These results are incorporated into identified employees' performance reviews and compensation and promotion decisions.

The Firm's clawback and cancellation provisions apply to deferred incentive compensation and cover a broad scope of employee conduct, including any act or omission (including with respect to direct supervisory responsibilities) that constitutes a breach of obligation to the Firm or causes a restatement of the Firm's financial results, constitutes a violation of the Firm's global risk management principles, policies and standards, or causes a loss of revenue associated with a position on which the employee was paid and the employee operated outside of risk management policies.

Risk Limits Framework

Risk limits and quantitative metrics provide the basis for monitoring risk-taking activity and avoiding outsized risk taking. Our risk-taking capacity is sized through the Firm's capital planning process where losses are estimated under the Firm's BHC Severely Adverse stress testing scenario. We also maintain a comprehensive suite of risk limits and quantitative metrics to support and implement our risk appetite statement. Our risk limits support linkages between the overall risk appetite, which is reviewed by the Board, and more granular risk-taking decisions and activities.

Risk limits, once established, are reviewed and updated on at least an annual basis, with more frequent updates as necessary. Board-level risk limits address the most important Firmwide aggregations of risk. Additional risk limits approved by the FRC address more specific types of risk and are bound by the higher-level Board risk limits.

Risk Management Process

In subsequent sections, we discuss our risk management policies and procedures for our primary risks involved in the activities of our Institutional Securities, Wealth Management and Investment Management business segments. These sections and the estimated amounts of our risk exposure generated by our statistical analyses are forward-looking statements. However, the analyses used to assess such risks are not predictions of future events, and actual results may vary significantly from such analyses due to events in the markets in which we operate and certain other factors described in the following paragraphs.

Market Risk

Market risk refers to the risk that a change in the level of one or more market prices, rates, spreads, indices, volatilities, correlations or other market factors, such as market liquidity, will result in losses for a position or portfolio. Generally, we incur market risk as a result of trading, investing and client facilitation activities, principally within the Institutional Securities business segment where the substantial majority of our VaR for market risk exposures is generated. In addition, we incur non-trading market risk, principally within the Wealth Management and Investment Management business segments. The Wealth Management business segment primarily incurs non-trading market risk (including interest rate risk) from lending and deposit-taking activities. The Investment Management business segment primarily incurs non-trading market risk from capital investments in its funds.

Market risk also includes non-trading interest rate risk. Non-trading interest rate risk in the banking book (amounts classified for regulatory capital purposes under the banking book regime) refers to the exposure that a change in interest rates will result in prospective earnings changes for assets and liabilities in the banking book.

Sound market risk management is an integral part of our culture. The various business units and trading desks are responsible for ensuring that market risk exposures are well-managed and prudent. The control groups help ensure that these risks are measured and closely monitored and are made transparent to senior management. The Market Risk Department is responsible for ensuring the transparency of material market risks, monitoring compliance with established limits and escalating risk concentrations to appropriate senior management.

To execute these responsibilities, the Market Risk Department monitors our risk against limits on aggregate risk exposures, performs a variety of risk analyses, routinely reports risk summaries, and maintains our VaR and scenario analysis systems. Market risk is also monitored through various measures: by use of statistics (including VaR and related analytical measures); by measures of position size and sensitivity; and through routine stress testing, which measures the impact on the value of existing portfolios of specified changes in market factors and scenarios designed by the Market Risk Department in collaboration with the business units. The material risks identified by these processes are summarized in reports produced by the Market Risk Department that are circulated to and discussed with senior management, the FRC, the BRC and the Board.

Trading Risks

Primary Market Risk Exposures and Market Risk Management

We have exposures to a wide range of risks related to interest rates and credit spreads, equity prices, foreign exchange rates and commodity prices as well as the associated implied volatilities, correlations and spreads of the global markets in which we conduct our trading activities.

We are exposed to interest rate and credit spread risk as a result of our market-making activities and other trading in interest rate-sensitive financial instruments *(i.e.,* risk arising from changes in the level or implied volatility of interest rates, the timing of mortgage prepayments, the shape of the yield curve and/or credit spreads). The activities from which those exposures arise and the markets in which we are active include, but are not limited to, the following: derivatives, corporate and government debt across both developed and

emerging markets and asset-backed debt, including mortgage-related securities.

We are exposed to equity price, correlation, and implied volatility risk as a result of making markets in equity securities and derivatives and maintaining other positions, including positions in non-public entities. Positions in non-public entities may include, but are not limited to, exposures to private equity, venture capital, private partnerships, real estate funds and other funds. Such positions are less liquid, have longer investment horizons and are more difficult to hedge than listed equities.

We are exposed to foreign exchange rate, correlation, and implied volatility risk as a result of making markets in foreign currencies and foreign currency derivatives, from maintaining foreign exchange positions and from holding non-U.S. dollar-denominated financial instruments.

We are exposed to commodity price and implied volatility risk as a result of market-making activities in commodity products related primarily to electricity, natural gas, oil and precious metals. Commodity exposures are subject to periods of high price volatility as a result of changes in supply and demand. These changes can be caused by weather conditions; physical production and transportation; or geopolitical and other events that affect the available supply and level of demand for these commodities.

We manage our trading positions by employing a variety of risk mitigation strategies. These strategies include diversification of risk exposures and hedging. Hedging activities consist of the purchase or sale of positions in related securities and financial instruments, including a variety of derivative products (*e.g.*, futures, forwards, swaps and options). Hedging activities may not always provide effective mitigation against trading losses due to differences in the terms, specific characteristics or other basis risks that may exist between the hedge instrument and the risk exposure that is being hedged.

We manage the market risk associated with our trading activities on a Firmwide basis, on a worldwide trading division level and on an individual product basis. We manage and monitor our market risk exposures in such a way as to maintain a portfolio that we believe is well-diversified in the aggregate with respect to market risk factors and that reflects our aggregate risk tolerance as established by our senior management.

Aggregate market risk limits have been approved for the Firm across all divisions worldwide. Additional market risk limits are assigned to trading desks and, as appropriate, products and regions. Trading division risk managers, desk risk managers, traders and the Market Risk Department monitor market risk measures against limits in accordance with policies set by our senior management.

Value-at-Risk

The statistical technique known as VaR is one of the tools we use to measure, monitor and review the market risk exposures of our trading portfolios. The Market Risk Department calculates and distributes daily VaR-based risk measures to various levels of management.

We estimate VaR using a model based on a one-year equal weighted historical simulation for general market risk factors and name-specific risk in corporate equities and related derivatives, and Monte Carlo simulation for name-specific risk in bonds, loans and related derivatives. The model constructs a distribution of hypothetical daily changes in the value of trading portfolios based on historical observation of daily changes in key market indices or other market risk factors, and information on the sensitivity of the portfolio values to these market risk factor changes.

VaR for risk management purposes (“Management VaR”) is computed at a 95% level of confidence over a one-day time horizon, which is a useful indicator of possible trading losses resulting from adverse daily market moves. The 95%/one-day VaR corresponds to the unrealized loss in portfolio value that, based on historically observed market risk factor movements, would have been exceeded with a frequency of 5%, or five times in every 100 trading days, if the portfolio were held constant for one day.

Our VaR model generally takes into account linear and non-linear exposures to equity and commodity price risk, interest rate risk, credit spread risk and foreign exchange rates. The model also takes into account linear exposures to implied volatility risks for all asset classes and non-linear exposures to implied volatility risks for equity, commodity and foreign exchange referenced products. The VaR model also captures certain implied correlation risks associated with portfolio credit derivatives, as well as certain basis risks *(e.g.,* corporate debt and related credit derivatives).

We use VaR as one of a range of risk management tools. Among their benefits, VaR models permit estimation of a portfolio’s aggregate market risk exposure, incorporating a range of varied market risks and portfolio assets. One key element of the VaR model is that it reflects risk reduction due to portfolio diversification or hedging activities. However, VaR has various limitations, which include, but are not limited to: use of historical changes in market risk factors, which may not be accurate predictors of future market conditions and may not fully incorporate the risk of extreme market events that are outsized relative to observed historical market behavior or reflect the historical distribution of results beyond the 95% confidence interval; and reporting of losses in a single day, which does not reflect the risk of positions that cannot be liquidated or hedged in one day. A small proportion of market risk generated by trading positions is not included in VaR.

The modeling of the risk characteristics of some positions relies on approximations that, under certain circumstances, could produce significantly different results from those produced using more precise measures. VaR is most appropriate as a risk measure for trading positions in liquid financial markets and will understate the risk associated with severe events, such as periods of extreme illiquidity. We are aware of these and other limitations and, therefore, use VaR as only one component in our risk management oversight process. This process also incorporates stress testing and scenario analyses and extensive risk monitoring, analysis and control at the trading desk, division and Firm levels.

We update our VaR model in response to changes in the composition of trading portfolios and to improvements in modeling techniques and systems capabilities. We are committed to continuous review and enhancement of VaR methodologies and assumptions in order to capture evolving risks associated with changes in market structure and dynamics. As part of our regular process improvements, additional systematic and name-specific risk factors may be added to improve the VaR model's ability to more accurately estimate risks to specific asset classes or industry sectors.

Since the reported VaR statistics are estimates based on historical data, VaR should not be viewed as predictive of our future revenues or financial performance or of our ability to monitor and manage risk. There can be no assurance that our actual losses on a particular day will not exceed the VaR amounts indicated in the following tables or that such losses will not occur more than five times in 100 trading days for a 95%/one-day VaR. VaR does not predict the magnitude of losses that, should they occur, may be significantly greater than the VaR amount.

VaR statistics are not readily comparable across firms because of differences in the firms' portfolios, modeling assumptions and methodologies. These differences can result in materially different VaR estimates across firms for similar portfolios. The impact of such differences varies depending on the factor history assumptions, the frequency with which the factor history is updated and the confidence level. As a result, VaR statistics are more useful when interpreted as indicators of trends in a firm's risk profile rather than as an absolute measure of risk to be compared across firms.

Our regulators have approved the same VaR model we use for risk management purposes for use in regulatory calculations.

The portfolio of positions used for Management VaR differs from that used for Regulatory VaR. Management VaR contains certain positions that are excluded from Regulatory VaR.

95%/One-Day Management VaR

	2022			
$ in millions	Period End	Average	High[1]	Low[1]
Interest rate and credit spread	**$ 37**	**$ 31**	**$ 43**	**$ 21**
Equity price	**16**	**23**	**41**	**16**
Foreign exchange rate	**10**	**8**	**19**	**3**
Commodity price	**26**	**27**	**41**	**15**
Less: Diversification benefit[2]	**(36)**	**(40)**	**N/A**	**N/A**
Primary Risk Categories	**$ 53**	**$ 49**	**$ 65**	**$ 31**
Credit Portfolio	**19**	**15**	**19**	**12**
Less: Diversification benefit[2]	**(9)**	**(11)**	**N/A**	**N/A**
Total Management VaR	**$ 63**	**$ 53**	**$ 74**	**$ 32**

	2021			
$ in millions	Period End	Average	High[1]	Low[1]
Interest rate and credit spread	$ 21	$ 29	$ 41	$ 21
Equity price	20	26	170	19
Foreign exchange rate	6	9	24	4
Commodity price	16	14	27	8
Less: Diversification benefit[2]	(31)	(32)	N/A	N/A
Primary Risk Categories	$ 32	$ 46	$ 171	$ 32
Credit Portfolio	12	15	31	11
Less: Diversification benefit[2]	(12)	(11)	N/A	N/A
Total Management VaR	$ 32	$ 50	$ 175	$ 32

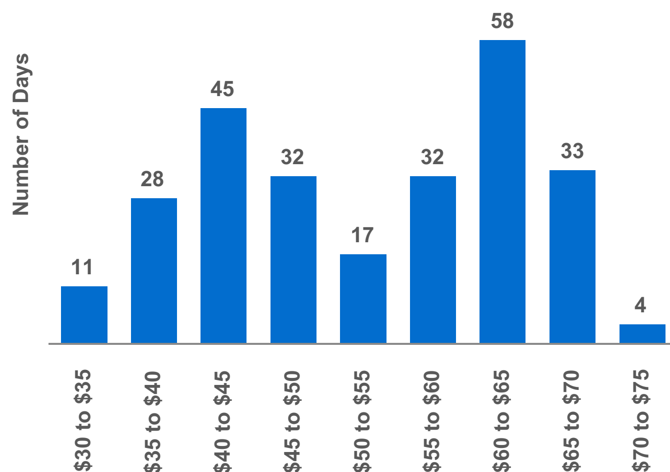
1. The high and low VaR values for the Total Management VaR and each of the component VaRs might have occurred on different days during the quarter, and, therefore, the diversification benefit is not an applicable measure.
2. Diversification benefit equals the difference between the total VaR and the sum of the component VaRs. This benefit arises because the simulated one-day losses for each of the components occur on different days; similar diversification benefits also are taken into account within each component.

Average Total Management VaR and Average Management VaR for the Primary Risk Categories increased in 2022 from 2021 primarily due to increased market volatility in the interest rate and credit spread categories, as well as the commodity price category which was partially offset by increased diversification benefit.

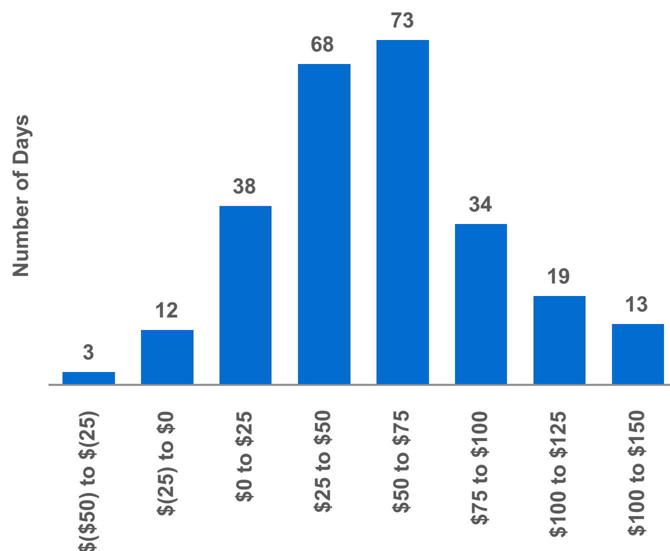
Distribution of VaR Statistics and Net Revenues

We evaluate the reasonableness of our VaR model by comparing the potential declines in portfolio values generated by the model with corresponding actual trading results for the Firm, as well as individual business units. For days where losses exceed the VaR statistic, we examine the drivers of trading losses to evaluate the VaR model's accuracy. There were 15 trading loss days in 2022, none of which exceeded 95% Total Management VaR, compared to 14 trading loss days in 2021, one of which exceeded 95% Total Management VaR.

Daily 95%/One-Day Total Management VaR for 2022
($ in millions)



Daily Net Trading Revenues for 2022
($ in millions)



The previous histogram shows the distribution of daily net trading revenues for 2022. Daily net trading revenues include profits and losses from Interest rate and credit spread, Equity price, Foreign exchange rate, Commodity price, and Credit Portfolio positions and intraday trading activities for our trading businesses. Certain items such as fees, commissions, net interest income and counterparty default risk are excluded from daily net trading revenues and the VaR model. Revenues required for Regulatory VaR backtesting further exclude intraday trading.

Non-Trading Risks

We believe that sensitivity analysis is an appropriate representation of our non-trading risks. The following sensitivity analyses cover substantially all of the non-trading risk in our portfolio.

Credit Spread Risk Sensitivity[1]

$ in millions	At December 31, 2022	At December 31, 2021
Derivatives	$ 7	$ 7
Borrowings carried at fair value	39	48

1. Amounts represent the potential gain for each 1 bps widening of our credit spread.

Credit spread risk sensitivity for borrowings carried at fair value at December 31, 2022 decreased from December 31, 2021 primarily due to widening credit spreads, partially offset by new debt issuance.

The Wealth Management business segment reflects a substantial portion of our non-trading interest rate risk. Historically, net interest income sensitivity for our U.S. Bank Subsidiaries was representative of such sensitivity for the Wealth Management business segment and, accordingly, we presented net interest income sensitivity for our U.S. Bank Subsidiaries. However, over time the Wealth Management business segment has grown its assets that generate net interest income outside of the U.S. Bank Subsidiaries, such as margin and other lending on non-bank entities, and this growth has been further accelerated by the acquisition of E*TRADE. Net interest income in the Wealth Management business segment primarily consists of interest income earned on non-trading assets held, including loans and investment securities, as well as margin and other lending on non-bank entities and interest expense incurred on non-trading liabilities, primarily deposits.

Wealth Management Net Interest Income Sensitivity Analysis[1]

$ in millions	At December 31, 2022	At December 31, 2021
Basis point change		
+100	$ 643	$ 1,648
-100	(745)	(1,023)

1. The prior period has been revised to conform to the current period presentation.

The previous table presents an analysis of selected instantaneous upward and downward parallel interest rate shocks (subject to a floor of zero percent in the downward scenario) on net interest income over the next 12 months for our Wealth Management business segment. These shocks are applied to our 12-month forecast for our Wealth Management business segment, which incorporates market expectations of interest rates and our forecasted business activity.

We do not manage to any single rate scenario but rather manage net interest income in our Wealth Management business segment to optimize across a range of possible outcomes, including non-parallel rate change scenarios. The sensitivity analysis assumes that we take no action in response to these scenarios, assumes there are no changes in other macroeconomic variables normally correlated with changes in interest rates and includes subjective assumptions regarding customer and market re-pricing behavior and other factors. Net interest income sensitivity to interest rates at December

31, 2022 decreased from December 31, 2021, primarily driven by the effects of changes in the the mix of our assets and liabilities and significant changes in market rates.

Investments Sensitivity, Including Related Carried Interest

	Loss from 10% Decline	
$ in millions	**At December 31, 2022**	At December 31, 2021
Investments related to Investment Management activities	**$ 431**	$ 407
Other investments:		
MUMSS	**143**	167
Other Firm investments	**378**	331

We have exposure to public and private companies through direct investments, as well as through funds that invest in these assets. These investments are predominantly equity positions with long investment horizons, a portion of which is for business facilitation purposes. The market risk related to these investments is measured by estimating the potential reduction in net revenues associated with a reasonably possible 10% decline in investment values and related impact on performance-based income, as applicable. Investments sensitivity changed between December 31, 2022 and December 31, 2021 with an increase in sensitivity in Other Firm investments primarily due to new investments in Community Reinvestment Act affordable housing, as well as lower sensitivity in MUMSS driven by Yen depreciation.

Asset Management Revenue Sensitivity

Certain asset management revenues in the Wealth Management and Investment Management business segments are derived from management fees, which are based on fee-based client assets in Wealth Management or AUM in Investment Management (together, "client holdings"). The assets underlying client holdings are primarily composed of equity, fixed income and alternative investments and are sensitive to changes in related markets. These revenues depend on multiple factors including, but not limited to, the level and duration of a market increase or decline, price volatility, the geographic and industry mix of client assets, and client behavior such as the rate and magnitude of client investments and redemptions. Therefore, overall revenues may not correlate completely with changes in the related markets.

Credit Risk

Credit risk refers to the risk of loss arising when a borrower, counterparty or issuer does not meet its financial obligations to us. We are primarily exposed to credit risk from institutions and individuals through our Institutional Securities and Wealth Management business segments.

We incur credit risk in our Institutional Securities business segment through a variety of activities, including, but not limited to, the following:

- extending credit to clients through loans and lending commitments;
- entering into swap or other derivative contracts under which counterparties may have obligations to make payments to us;
- providing short- or long-term funding that is secured by physical or financial collateral whose value may at times be insufficient to fully cover the repayment amount;
- posting margin and/or collateral to clearinghouses, clearing agencies, exchanges, banks, securities firms and other financial counterparties;
- placing funds on deposit at other financial institutions to support our clearing and settlement obligations; and
- investing or trading in securities and loan pools, whereby the value of these assets may fluctuate based on realized or expected defaults on the underlying obligations or loans.

We incur credit risk in our Wealth Management business segment, primarily through lending to individuals and entities, including, but not limited to, the following:

- margin loans collateralized by securities;
- securities-based lending and other forms of secured loans, including tailored lending to high and ultra-high net worth clients;
- single-family residential mortgage loans in conforming, non-conforming or HELOC form primarily to existing Wealth Management clients; and
- employee loans granted primarily to recruit certain Wealth Management representatives.

Monitoring and Control

The Credit Risk Management Department ("CRM") establishes Firmwide practices to evaluate, monitor and control credit risk at the transaction, obligor and portfolio levels. The CRM approves extensions of credit, evaluates the creditworthiness of the counterparties and borrowers on a regular basis, and helps ensure that credit exposure is actively monitored and managed. The evaluation of counterparties and borrowers includes an assessment of the probability that an obligor will default on its financial obligations and any losses that may occur when an obligor defaults. In addition, credit risk exposure is actively managed by credit professionals and committees within the CRM and through various risk committees, whose membership includes individuals from the CRM. A comprehensive and global Credit Limits Framework is utilized to manage credit risk levels across the Firm. The Credit Limits Framework is calibrated within our risk tolerance and includes single-name limits and portfolio concentration limits by country, industry and product type.

The CRM helps ensure timely and transparent communication of material credit risks, compliance with established limits and escalation of risk concentrations to appropriate senior management. The CRM also works closely with the Market Risk Department and applicable business units to monitor risk exposures and to perform stress tests to identify, analyze and control credit risk concentrations arising from lending and

trading activities. The stress tests shock market factors (*e.g.*, interest rates, commodity prices, credit spreads), risk parameters (*e.g.,* probability of default and loss given default), recovery rates and expected losses in order to assess the impact of stresses on exposures, profit and loss, and our capital position. Stress tests are conducted in accordance with our established policies and procedures.

Credit Evaluation

The evaluation of corporate and institutional counterparties and borrowers includes assigning credit ratings, which reflect an assessment of an obligor's probability of default and loss given default. Credit evaluations typically involve the assessment of financial statements; leverage; liquidity; capital strength; asset composition and quality; market capitalization; access to capital markets; adequacy of collateral, if applicable; and, in the case of certain loans, cash flow projections and debt service requirements. The CRM also evaluates strategy, market position, industry dynamics, management and other factors such as country risks and legal and contingent risks that could affect the obligor's risk profile. Additionally, the CRM evaluates the relative position of our exposure in the borrower's capital structure and relative recovery prospects, as well as other structural elements of the particular transaction.

The evaluation of consumer borrowers is tailored to the specific type of lending. Securities-based loans are evaluated based on factors that include, but are not limited to, the amount of the loan and the amount, quality, diversification, price volatility and liquidity of the collateral. The underwriting of residential real estate loans includes, but is not limited to, review of the obligor's debt-to-income ratio, net worth, liquidity, collateral, LTV ratio and industry standard credit scoring models (*e.g.*, FICO scores). Subsequent credit monitoring for individual loans is performed at the portfolio level, and collateral values are monitored on an ongoing basis.

Credit risk metrics assigned to our borrowers during the evaluation process are incorporated into the CRM maintenance of the allowance for credit losses. Such allowance serves as a reserve for probable inherent losses, as well as probable losses related to loans identified as impaired. For more information on the allowance for credit losses, see Notes 2 and 10 to the financial statements.

Risk Mitigation

We may seek to mitigate credit risk from our lending and trading activities in multiple ways, including collateral provisions, guarantees and hedges. At the transaction level, we seek to mitigate risk through management of key risk elements such as size, tenor, financial covenants, seniority and collateral. We actively hedge our lending and derivatives exposures. Hedging activities consist of the purchase or sale of positions in related securities and financial instruments, including a variety of derivative products (*e.g.*, futures, forwards, swaps and options). Additionally, we may sell, assign or syndicate loans and lending commitments to other financial institutions in the primary and secondary loan markets.

In connection with our derivatives trading activities, we generally enter into master netting agreements and collateral arrangements with counterparties. These agreements provide us with the ability to demand collateral, as well as to liquidate collateral and offset receivables and payables covered under the same master agreement in the event of a counterparty default. A collateral management group monitors collateral levels against requirements and oversees the administration of the collateral function. See Note 9 to the financial statements for additional information about our collateralized transactions.

Loans and Lending Commitments

	At December 31, 2022			
$ in millions	HFI	HFS	FVO	Total
Institutional Securities:				
Corporate	$ 6,589	$ 10,634	$ —	$ 17,223
Secured lending facilities	35,606	3,176	6	38,788
Commercial and Residential real estate	8,515	926	2,548	11,989
Securities-based lending and Other	2,865	39	5,625	8,529
Total Institutional Securities	**53,575**	**14,775**	**8,179**	**76,529**
Wealth Management:				
Residential real estate	54,460	4	—	54,464
Securities-based lending and Other	91,797	9	—	91,806
Total Wealth Management	**146,257**	**13**	**—**	**146,270**
Total Investment Management[1]	**4**	**—**	**218**	**222**
Total loans[2]	**199,836**	**14,788**	**8,397**	**223,021**
ACL	**(839)**			**(839)**
Total loans, net of ACL	**$198,997**	**$ 14,788**	**$ 8,397**	**$ 222,182**
Lending commitments[3]				**$ 136,960**
Total exposure				**$ 359,142**

$ in millions	At December 31, 2021 HFI	HFS	FVO	Total
Institutional Securities:				
Corporate	$ 5,567	$ 8,107	$ 8	$ 13,682
Secured lending facilities	31,471	3,879	—	35,350
Commercial and Residential real estate	7,227	1,777	4,774	13,778
Securities-based lending and Other	1,292	45	7,710	9,047
Total Institutional Securities	45,557	13,808	12,492	71,857
Wealth Management:				
Residential real estate	44,251	7	—	44,258
Securities-based lending and Other	85,143	17	—	85,160
Total Wealth Management	129,394	24	—	129,418
Total Investment Management[1]	5	—	135	140
Total loans[2]	174,956	13,832	12,627	201,415
ACL	(654)			(654)
Total loans, net of ACL	$174,302	$ 13,832	$12,627	$ 200,761
Lending commitments[3]				$ 134,934
Total exposure				$ 335,695

Total exposure—consists of Total loans, net of ACL, and Lending commitments
1. Investment Management business segment loans are related to certain of our activities as an investment advisor and manager. Loans held at fair value are the result of the consolidation of investment vehicles (including CLOs) managed by Investment Management, composed primarily of senior secured loans to corporations.
2. FVO also includes the fair value of certain unfunded lending commitments.
3. Lending commitments represent the notional amount of legally binding obligations to provide funding to clients for lending transactions. Since commitments associated with these business activities may expire unused or may not be utilized to full capacity, they do not necessarily reflect the actual future cash funding requirements.

We provide loans and lending commitments to a variety of customers, including large corporate and institutional clients, as well as high to ultra-high net worth individuals. In addition, we purchase loans in the secondary market. Loans and lending commitments are either held for investment, held for sale or carried at fair value. For more information on these loan classifications, see Note 2 to the financial statements.

In 2022, total loans and lending commitments increased by approximately $23 billion, primarily due to growth in Residential real estate loans and Securities-based loans within the Wealth Management business segment, as well as an increase in Secured lending facilities within the Institutional Securities business segment.

See Notes 5, 6, 10 and 15 to the financial statements for further information.

Allowance for Credit Losses—Loans and Lending Commitments

$ in millions		
ACL—Loans	$	654
ACL—Lending commitments		444
Total at December 31, 2021		1,098
Gross charge-offs		**(31)**
Recoveries		**7**
Net (charge-offs) recoveries		**(24)**
Provision for credit losses		**280**
Other		**(11)**
Total at December 31, 2022	**$**	**1,343**
ACL—Loans	**$**	**839**
ACL—Lending commitments		**504**

Provision for Credit Losses by Business Segment

$ in millions	Year Ended December 31, 2022 IS	WM	Total
Loans	**$ 149**	**$ 67**	**$ 216**
Lending commitments	**62**	**2**	**64**
Total	**$ 211**	**$ 69**	**$ 280**

Credit exposure arising from our loans and lending commitments is measured in accordance with our internal risk management standards. Risk factors considered in determining the allowance for credit losses for loans and lending commitments include the borrower's financial strength, industry, facility structure, LTV ratio, debt service ratio, collateral and covenants. Qualitative and environmental factors such as economic and business conditions, nature and volume of the portfolio and lending terms, and volume and severity of past due loans may also be considered.

The aggregate allowance for credit losses for loans and lending commitments increased in 2022, reflecting the Provision for credit losses due to portfolio growth and deterioration in macroeconomic outlook.

The base scenario used in our ACL models as of December 31, 2022 was generated using a combination of consensus economic forecasts, forward rates, and internally developed and validated models, and assumes weak economic growth over the forecast period. Given the nature of our lending portfolio, the most sensitive model input is U.S. gross domestic product.

Forecasted U.S. Real GDP Growth Rates in Base Scenario

	4Q 2023	4Q 2024
Year-over-year growth rate	**0.4 %**	**1.7 %**

See Notes 10 to the financial statements for further information. See Note 2 to the financial statements for a discussion of the Firm's ACL methodology under CECL.

Status of Loans Held for Investment

	At December 31, 2022		At December 31, 2021	
	IS	WM	IS	WM
Accrual	**99.3 %**	**99.9 %**	98.7 %	99.8 %
Nonaccrual[1]	**0.7 %**	**0.1 %**	1.3 %	0.2 %

1. These loans are on nonaccrual status because the loans were past due for a period of 90 days or more or payment of principal or interest was in doubt.

Net Charge-off Ratios for Loans Held for Investment

$ in millions	Corporate	Secured Lending Facilities	CRE	Residential Real Estate	SBL and Other	Total
2022						
Net charge-off ratio[1]	**(0.09)%**	**0.01 %**	**0.09 %**	**— %**	**0.02 %**	**0.01 %**
Average loans	**$ 6,544**	**$33,172**	**$8,234**	**$ 49,937**	**$93,427**	**$191,314**
2021						
Net charge-off ratio[1]	0.44 %	0.24 %	0.38 %	— %	0.01 %	0.08 %
Average loans	$ 5,184	$27,833	$7,089	$ 39,111	$75,230	$154,447
2020						
Net charge-off ratio[1]	0.41 %	— %	0.87 %	— %	(0.01)%	0.07 %
Average loans	$ 8,633	$25,281	$7,326	$ 32,361	$56,018	$129,619

1. Net charge-off ratio represents gross charge-offs net of recoveries divided by total average loans held for investment before ACL.

Institutional Securities Loans and Lending Commitments[1]

	At December 31, 2022				
	Contractual Years to Maturity				
$ in millions	< 1	1-5	5-15	>15	Total
Loans					
AA	**$ 66**	**$ —**	**$ 139**	**$ —**	**$ 205**
A	**1,331**	**787**	**185**	**—**	**2,303**
BBB	**5,632**	**10,712**	**465**	**—**	**16,809**
BB	**11,045**	**19,219**	**796**	**162**	**31,222**
Other NIG	**7,274**	**10,249**	**3,945**	**139**	**21,607**
Unrated[2]	**95**	**924**	**624**	**2,066**	**3,709**
Total loans, net of ACL	**25,443**	**41,891**	**6,154**	**2,367**	**75,855**
Lending commitments					
AAA	**—**	**50**	**—**	**—**	**50**
AA	**2,515**	**2,935**	**11**	**—**	**5,461**
A	**5,030**	**19,717**	**202**	**330**	**25,279**
BBB	**10,263**	**39,615**	**566**	**—**	**50,444**
BB	**3,691**	**17,656**	**1,416**	**96**	**22,859**
Other NIG	**1,173**	**13,872**	**530**	**—**	**15,575**
Unrated[2]	**—**	**20**	**—**	**3**	**23**
Total lending commitments	**22,672**	**93,865**	**2,725**	**429**	**119,691**
Total exposure	**$ 48,115**	**$135,756**	**$ 8,879**	**$ 2,796**	**$195,546**

	At December 31, 2021				
	Contractual Years to Maturity				
$ in millions	< 1	1-5	5-15	>15	Total
Loans					
AA	$ —	$ 35	$ 38	$ —	$ 73
A	890	1,089	675	—	2,654
BBB	5,335	8,944	563	—	14,842
BB	10,734	18,349	814	18	29,915
Other NIG	4,656	10,475	3,439	160	18,730
Unrated[2]	171	665	511	3,753	5,100
Total loans, net of ACL	21,786	39,557	6,040	3,931	71,314
Lending commitments					
AAA	—	50	—	—	50
AA	3,283	2,690	—	—	5,973
A	5,255	17,646	407	303	23,611
BBB	6,703	36,096	766	—	43,565
BB	2,859	19,698	3,122	—	25,679
Other NIG	992	13,420	6,180	55	20,647
Unrated[2]	672	40	3	—	715
Total lending commitments	19,764	89,640	10,478	358	120,240
Total exposure	$ 41,550	$129,197	$ 16,518	$ 4,289	$191,554

NIG–Non-investment grade
1. Counterparty credit ratings are internally determined by the CRM.
2. Unrated loans and lending commitments are primarily trading positions that are measured at fair value and risk-managed as a component of market risk. For a further discussion of our market risk, see “Quantitative and Qualitative Disclosures about Risk—Market Risk” herein.

Institutional Securities Loans and Lending Commitments by Industry

$ in millions	At December 31, 2022	At December 31, 2021
Financials	**$ 54,222**	$ 52,066
Real estate	**32,358**	31,560
Communications services	**15,336**	12,645
Industrials	**14,557**	17,446
Information technology	**13,790**	13,471
Healthcare	**12,353**	12,618
Consumer discretionary	**11,592**	11,628
Utilities	**10,542**	10,310
Energy	**9,115**	8,544
Consumer staples	**7,823**	7,855
Materials	**6,102**	6,394
Insurance	**5,925**	4,954
Other	**1,831**	2,063
Total exposure	**$ 195,546**	$ 191,554

Institutional Securities Lending Activities

The Institutional Securities business segment lending activities include Corporate, Secured lending facilities, Commercial real estate, and Securities-based lending and Other. As of December 31, 2022, over 90% of our total lending exposure, which consists of loans and lending commitments, is investment grade and/or secured by collateral.

Corporate comprises relationship and event-driven loans and lending commitments supporting general and event-driven financing needs for our institutional clients, which typically consist of revolving lines of credit, term loans and bridge

loans; may have varying terms; may be senior or subordinated; may be secured or unsecured; are generally contingent upon representations, warranties and contractual conditions applicable to the borrower; and may be syndicated, traded or hedged. Relationship loans and lending commitments are extended to select institutional clients, primarily for general corporate purposes and generally with the intent to hold for the foreseeable future. Event-driven loans and lending commitments are extended in connection with specific client transactions and are explained in further detail in "Institutional Securities Event-Driven Loans and Lending Commitments" herein.

Secured lending facilities include loans provided to clients, which are collateralized by various assets, including residential and commercial real estate mortgage loans, investor commitments for capital calls, corporate loans and other assets. These facilities generally provide for overcollateralization. Credit risk with respect to these loans and lending commitments arises from the failure of a borrower to perform according to the terms of the loan agreement and/or a decline in the underlying collateral value. The Firm monitors collateral levels against the requirements of lending agreements. See Note 16 to the financial statements for information about our securitization activities.

Commercial real estate loans are primarily senior, secured by underlying real estate and are typically in term loan form. In addition, as part of certain of its trading and securitization activities, Institutional Securities may also hold residential real estate loans.

Securities-based lending and Other includes financing extended to sales and trading customers and corporate loans purchased in the secondary market.

Institutional Securities Event-Driven Loans and Lending Commitments

	At December 31, 2022[1]			
	Contractual Years to Maturity			
$ in millions	<1	1-5	5-15	Total
Loans, net of ACL	**$ 2,385**	**$ 1,441**	**$ 2,771**	**$ 6,597**
Lending commitments	**3,079**	**861**	**603**	**4,543**
Total exposure	**$ 5,464**	**$ 2,302**	**$ 3,374**	**$ 11,140**

	At December 31, 2021			
	Contractual Years to Maturity			
$ in millions	<1	1-5	5-15	Total
Loans, net of ACL	$ 951	$ 2,088	$ 1,803	$ 4,842
Lending commitments	1,619	5,288	8,879	15,786
Total exposure	$ 2,570	$ 7,376	$ 10,682	$ 20,628

1. In the fourth quarter of the current year, approximately $0.5 billion of loans and $4.0 billion of lending commitments in a portfolio substantially consisting of revolving credit facilities across multiple corporate relationships were reclassified within Corporate Lending from Event Lending to Relationship Lending.

Event-driven loans and lending commitments are associated with an underwriting and/or syndication to finance a specific transaction, such as merger, acquisition, recapitalization or project finance activities. Balances may fluctuate as such lending is related to transactions that vary in timing and size from period to period.

Institutional Securities Loans and Lending Commitments Held for Investment

	At December 31, 2022		
$ in millions	Loans	Lending Commitments	Total
Corporate	**$ 6,589**	**$ 79,882**	**$ 86,471**
Secured lending facilities	**35,606**	**12,803**	**48,409**
Commercial real estate	**8,515**	**374**	**8,889**
Other	**2,865**	**985**	**3,850**
Total, before ACL	**$ 53,575**	**$ 94,044**	**$ 147,619**
ACL	**$ (674)**	**$ (484)**	**$ (1,158)**

	At December 31, 2021		
$ in millions	Loans	Lending Commitments	Total
Corporate	$ 5,567	$ 73,585	$ 79,152
Secured lending facilities	31,471	10,003	41,474
Commercial real estate	7,227	1,475	8,702
Other	1,292	887	2,179
Total, before ACL	$ 45,557	$ 85,950	$ 131,507
ACL	$ (543)	$ (426)	$ (969)

Institutional Securities Allowance for Credit Losses—Loans and Lending Commitments

$ in millions	Corporate	Secured Lending Facilities	Commercial Real Estate	Other	Total
ACL—Loans	$ 165	$ 163	$ 206	$ 9	$ 543
ACL—Lending commitments	356	41	20	9	426
Total at December 31, 2021	521	204	226	18	969
Gross charge-offs	**—**	**(3)**	**(7)**	**(7)**	**(17)**
Recoveries	**6**	**—**	**—**	**—**	**6**
Net (charge-offs) recoveries	**6**	**(3)**	**(7)**	**(7)**	**(11)**
Provision for credit losses	**124**	**4**	**75**	**8**	**211**
Other	**(5)**	**(1)**	**(4)**	**(1)**	**(11)**
Total at December 31, 2022	**$ 646**	**$ 204**	**$ 290**	**$ 18**	**$1,158**
ACL—Loans	**$ 235**	**$ 153**	**$ 275**	**$ 11**	**$ 674**
ACL—Lending commitments	**411**	**51**	**15**	**7**	**484**

Institutional Securities Loans Held for Investment—Ratios of Allowance for Credit Losses to Balance before Allowance

	At December 31, 2022	At December 31, 2021
Corporate	**3.6%**	3.0%
Secured lending facilities	**0.4%**	0.5%
Commercial real estate	**3.2%**	2.9%
Other	**0.4%**	0.7%
Total Institutional Securities loans	**1.3%**	1.2%

Wealth Management Loans and Lending Commitments

	At December 31, 2022				
	Contractual Years to Maturity				
$ in millions	<1	1-5	5-15	>15	Total
Securities-based lending and Other loans	**$ 80,526**	**$ 9,371**	**$ 1,692**	**$ 140**	**$ 91,729**
Residential real estate loans	**1**	**32**	**1,375**	**52,968**	**54,376**
Total loans, net of ACL	**$ 80,527**	**$ 9,403**	**$ 3,067**	**$ 53,108**	**$ 146,105**
Lending commitments	**12,408**	**4,501**	**37**	**323**	**17,269**
Total exposure	**$ 92,935**	**$ 13,904**	**$ 3,104**	**$ 53,431**	**$ 163,374**

	At December 31, 2021[1]				
	Contractual Years to Maturity				
$ in millions	<1	1-5	5-15	>15	Total
Securities-based lending and Other loans	$ 74,466	$ 8,927	$ 1,571	$ 144	$ 85,108
Residential real estate loans	4	10	1,231	42,954	44,199
Total loans, net of ACL	$ 74,470	$ 8,937	$ 2,802	$ 43,098	$ 129,307
Lending commitments	11,894	2,467	51	282	14,694
Total exposure	$ 86,364	$ 11,404	$ 2,853	$ 43,380	$ 144,001

The principal Wealth Management business segment lending activities include Securities-based lending and Residential real estate loans.

Securities-based lending allows clients to borrow money against the value of qualifying securities, generally for any purpose other than purchasing, trading or carrying securities or refinancing margin debt. We establish approved credit lines against qualifying securities and monitor limits daily and, pursuant to such guidelines, require customers to deposit additional collateral, or reduce debt positions, when necessary. These credit lines are primarily uncommitted loan facilities, as we reserve the right not to make any advances or may terminate these credit lines at any time. Factors considered in the review of these loans include, but are not limited to, the loan amount, the client's credit profile, the degree of leverage, collateral diversification, price volatility and liquidity of the collateral.

Residential real estate loans consist of first and second lien mortgages, including HELOCs. Our underwriting policy is designed to ensure that all borrowers pass an assessment of capacity and willingness to pay, which includes an analysis utilizing industry standard credit scoring models (*e.g.*, FICO scores), debt-to-income ratios and assets of the borrower. LTV ratios are determined based on independent third-party property appraisals and valuations, and security lien positions are established through title and ownership reports. The vast majority of mortgage loans, including HELOCs, are held for investment in the Wealth Management business segment's loan portfolio.

Wealth Management Allowance for Credit Losses—Loans and Lending Commitments

$ in millions	
ACL—Loans	$ 111
ACL—Lending commitments	18
Total at December 31, 2021	129
Gross charge-offs	**(14)**
Recoveries	**1**
Net (charge-offs) recoveries	**(13)**
Provision for credit losses	**69**
Total at December 31, 2022	**$ 185**
ACL—Loans	**$ 165**
ACL—Lending commitments	**20**

At December 31, 2022, more than 75% of Wealth Management residential real estate loans were to borrowers with "Exceptional" or "Very Good" FICO scores (*i.e.*, exceeding 740). Additionally, Wealth Management's securities-based lending portfolio remains well-collateralized and subject to daily client margining, which includes requiring customers to deposit additional collateral or reduce debt positions, when necessary.

Customer and Other Receivables

Margin and Other Lending

$ in millions	At December 31, 2022	At December 31, 2021
Institutional Securities	**$ 16,591**	$ 40,545
Wealth Management	**21,933**	30,987
Total	**$ 38,524**	$ 71,532

The Institutional Securities and Wealth Management business segments provide margin lending arrangements that allow customers to borrow against the value of qualifying securities, primarily for the purpose of purchasing additional securities, as well as to collateralize short positions. Institutional Securities primarily includes margin loans in the Equity Financing business. Wealth Management includes margin loans as well as non-purpose securities-based lending on non-bank entities. Amounts may fluctuate from period to period as overall client balances change as a result of market levels, client positioning and leverage.

Credit exposures arising from margin lending activities are generally mitigated by their short-term nature, the value of collateral held and our right to call for additional margin when collateral values decline. However, we could incur losses in the event that the customer fails to meet margin calls and collateral values decline below the loan amount. This risk is elevated in loans backed by collateral pools with significant concentrations in individual issuers or securities with similar risk characteristics. For a further discussion, see "Risk Factors—Credit Risk" herein.

Employee Loans

For information on employee loans and related ACL, see Note 10 to the financial statements.

Derivatives

Fair Value of OTC Derivative Assets

$ in millions	Counterparty Credit Rating[1] AAA	AA	A	BBB	NIG	Total
At December 31, 2022						
Less than 1 year	**$ 2,903**	**$ 18,166**	**$ 40,825**	**$ 32,373**	**$ 10,730**	**$104,997**
1-3 years	**1,818**	**8,648**	**17,113**	**19,365**	**6,974**	**53,918**
3-5 years	**655**	**6,834**	**8,632**	**9,105**	**4,049**	**29,275**
Over 5 years	**4,206**	**42,613**	**45,488**	**46,660**	**8,244**	**147,211**
Total, gross	**$ 9,582**	**$ 76,261**	**$112,058**	**$107,503**	**$ 29,997**	**$335,401**
Counterparty netting	**(4,037)**	**(60,451)**	**(79,334)**	**(85,786)**	**(17,415)**	**(247,023)**
Cash and securities collateral	**(3,632)**	**(13,402)**	**(28,776)**	**(14,457)**	**(5,198)**	**(65,465)**
Total, net	**$ 1,913**	**$ 2,408**	**$ 3,948**	**$ 7,260**	**$ 7,384**	**$ 22,913**

$ in millions	Counterparty Credit Rating[1] AAA	AA	A	BBB	NIG	Total
At December 31, 2021						
Less than 1 year	$ 1,561	$ 11,088	$ 32,069	$ 25,680	$ 11,924	$ 82,322
1-3 years	780	4,577	16,821	15,294	6,300	43,772
3-5 years	593	4,807	6,805	8,030	3,317	23,552
Over 5 years	4,359	26,056	61,091	44,091	4,633	140,230
Total, gross	$ 7,293	$ 46,528	$116,786	$ 93,095	$ 26,174	$289,876
Counterparty netting	(3,093)	(36,957)	(91,490)	(68,365)	(11,642)	(211,547)
Cash and securities collateral	(3,539)	(7,608)	(20,500)	(17,755)	(5,762)	(55,164)
Total, net	$ 661	$ 1,963	$ 4,796	$ 6,975	$ 8,770	$ 23,165

$ in millions	**At December 31, 2022**	At December 31, 2021
Industry		
Financials	**$ 6,294**	$ 5,096
Utilities	**5,656**	5,918
Energy	**2,851**	2,587
Regional governments	**2,052**	963
Industrials	**1,433**	985
Communications services	**1,051**	348
Consumer staples	**687**	324
Healthcare	**565**	682
Information technology	**480**	1,060
Sovereign governments	**410**	386
Materials	**317**	240
Consumer Discretionary	**290**	3,069
Not-for-profit organizations	**204**	531
Insurance	**185**	174
Real estate	**95**	280
Other	**343**	522
Total	**$ 22,913**	$ 23,165

1. Counterparty credit ratings are determined internally by the CRM.

We are exposed to credit risk as a dealer in OTC derivatives. Credit risk with respect to derivative instruments arises from the possibility that a counterparty may fail to perform according to the terms of the contract. For a description of our risk mitigation strategies, see "Credit Risk—Risk Mitigation" herein.

Credit Derivatives

A credit derivative is a contract between a seller and buyer of protection against the risk of a credit event occurring on one or more debt obligations issued by a specified reference entity. The buyer typically pays a periodic premium over the life of the contract and is protected for the period. If a credit event occurs, the seller is required to make payment to the beneficiary based on the terms of the credit derivative contract. Credit events, as defined in the contract, may be one or more of the following defined events: bankruptcy, dissolution or insolvency of the referenced entity, failure to pay, obligation acceleration, repudiation, payment moratorium and restructuring.

We trade in a variety of credit derivatives and may either purchase or write protection on a single name or portfolio of referenced entities. In transactions referencing a portfolio of entities or securities, protection may be limited to a tranche of exposure or a single name within the portfolio. We are an active market maker in the credit derivatives markets. As a market maker, we work to earn a bid-offer spread on client flow business and manage any residual credit or correlation risk on a portfolio basis. Further, we use credit derivatives to manage our exposure to residential and commercial mortgage loans and corporate lending exposures. The effectiveness of our CDS protection as a hedge of our exposures may vary depending upon a number of factors, including the contractual terms of the CDS.

We actively monitor our counterparty credit risk related to credit derivatives. A majority of our counterparties are composed of banks, broker-dealers, insurance and other financial institutions. Contracts with these counterparties may include provisions related to counterparty rating downgrades, which may result in the counterparty posting additional collateral to us. As with all derivative contracts, we consider counterparty credit risk in the valuation of our positions and recognize CVAs as appropriate within Trading revenues in the income statement.

For additional credit exposure information on our credit derivative portfolio, see Note 7 to the financial statements.

Country Risk

Country risk exposure is the risk that events in, or that affect, a foreign country (any country other than the U.S.) might adversely affect us. We actively manage country risk exposure through a comprehensive risk management framework that combines credit and other market fundamentals and allows us to effectively identify, monitor and limit country risk.

Our obligor credit evaluation process may also identify indirect exposures, whereby an obligor has vulnerability or exposure to another country or jurisdiction. Examples of indirect exposures include mutual funds that invest in a single country, offshore companies whose assets reside in another country to that of the offshore jurisdiction and finance company subsidiaries of corporations. Indirect exposures identified through the credit evaluation process may result in a reclassification of country risk.

We conduct periodic stress testing that seeks to measure the impact on our credit and market exposures of shocks stemming from negative economic or political scenarios. When deemed appropriate by our risk managers, the stress test scenarios include possible contagion effects and second order risks. This analysis, and results of the stress tests, may result in the amendment of limits or exposure mitigation.

Our sovereign exposures consist of financial contracts and obligations entered into with sovereign and local governments. Our non-sovereign exposures consist of financial contracts and obligations entered into primarily with corporations and financial institutions.

Index credit derivatives are included in the following country risk exposure table. Each reference entity within an index is allocated to that reference entity's country of risk. Index exposures are allocated to the underlying reference entities in proportion to the notional weighting of each reference entity in the index, adjusted for any fair value receivable or payable for that reference entity. Where credit risk crosses multiple jurisdictions, for example, a CDS purchased from an issuer in a specific country that references bonds issued by an entity in a different country, the fair value of the CDS is reflected in the Net Counterparty Exposure row based on the country of the CDS issuer. Further, the notional amount of the CDS adjusted for the fair value of the receivable or payable is reflected in the Net Inventory row based on the country of the underlying reference entity.

Top 10 Non-U.S. Country Exposures at December 31, 2022

$ in millions	United Kingdom	Germany	France	Japan	Brazil
Sovereign					
Net inventory[1]	$ (241)	$ 981	$1,936	$2,522	$3,087
Net counterparty exposure[2]	2	104	10	142	—
Exposure before hedges	(239)	1,085	1,946	2,664	3,087
Hedges[3]	(56)	(284)	(6)	(167)	(177)
Net exposure	$ (295)	$ 801	$1,940	$2,497	$2,910
Non-sovereign					
Net inventory[1]	$ 1,400	$ 454	$ 203	$ 974	$ 63
Net counterparty exposure[2]	13,064	4,059	4,002	3,675	494
Loans	5,020	1,034	438	334	289
Lending commitments	6,624	3,911	2,617	—	379
Exposure before hedges	26,108	9,458	7,260	4,983	1,225
Hedges[3]	(1,990)	(1,603)	(1,838)	(602)	(32)
Net exposure	$ 24,118	$ 7,855	$5,422	$4,381	$1,193
Total net exposure	$ 23,823	$ 8,656	$7,362	$6,878	$4,103

$ in millions	Canada	China	Australia	India	Spain
Sovereign					
Net inventory[1]	$ (195)	$ 308	$ (1,076)	$ 886	$ (499)
Net counterparty exposure[2]	60	190	71	—	52
Exposure before hedges	(135)	498	(1,005)	886	(447)
Hedges[3]	—	(66)	—	—	(8)
Net exposure	$ (135)	$ 432	$ (1,005)	$ 886	$ (455)
Non-sovereign					
Net inventory[1]	$ 525	$ 948	$ 523	$ 992	$ 303
Net counterparty exposure[2]	1,450	724	896	717	456
Loans	230	410	1,671	139	2,055
Lending commitments	1,360	671	958	—	830
Exposure before hedges	3,565	2,753	4,048	1,848	3,644
Hedges[3]	(157)	(111)	(261)	—	(578)
Net exposure	$ 3,408	$ 2,642	$ 3,787	$1,848	$3,066
Total net exposure	$ 3,273	$ 3,074	$ 2,782	$2,734	$2,611

1. Net inventory represents exposure to both long and short single-name and index positions (*i.e.*, bonds and equities at fair value and CDS based on a notional amount assuming zero recovery adjusted for the fair value of any receivable or payable).
2. Net counterparty exposure (*e.g*, repurchase transactions, securities lending and OTC derivatives) is net of the benefit of collateral received and also is net by counterparty when legally enforceable master netting agreements are in place. For more information, see "Additional Information—Top 10 Non-U.S. Country Exposures" herein.
3. Amounts represent net CDS hedges (purchased and sold) on net counterparty exposure and lending executed by trading desks responsible for hedging counterparty and lending credit risk exposures. Amounts are based on the CDS notional amount assuming zero recovery adjusted for the fair value of any receivable or payable. For further description of the contractual terms for purchased credit protection and whether they may limit the effectiveness of our hedges, see "Quantitative and Qualitative Disclosures about Risk—Credit Risk—Derivatives" herein.

Additional Information—Top 10 Non-U.S. Country Exposures

Collateral Held against Net Counterparty Exposure[1]

$ in millions		At December 31, 2022
Country of Risk	**Collateral**[2]	
United Kingdom	U.K., U.S. and France	$ 9,056
Japan	Japan and U.S.	5,962
Other	Italy, France, and Spain	18,557

1. The benefit of collateral received is reflected in the Top 10 Non-U.S. Country Exposures at December 31, 2022.
2. Primarily consists of cash and government obligations of the countries listed.

Operational Risk

Operational risk refers to the risk of loss, or of damage to our reputation, resulting from inadequate or failed processes or systems, from human factors or from external events (*e.g.*, cyber attacks or third-party vulnerabilities) that may manifest as, for example, loss of information, business disruption, theft and fraud, legal and compliance risks, or damage to physical assets. We may incur operational risk across the full scope of our business activities, including revenue-generating activities and support and control groups (*e.g.*, information technology and trade processing).

We have established an operational risk framework to identify, measure, monitor and control risk across the Firm. Effective operational risk management is essential to reducing the impact of operational risk incidents and mitigating legal, regulatory and reputational risks. The framework is continually evolving to account for changes in the Firm and to respond to the changing regulatory and business environment.

We have implemented operational risk data and assessment systems to monitor and analyze internal and external operational risk events, to assess business environment and internal control factors, and to perform scenario analysis. The collected data elements are incorporated in the operational risk capital model. The model encompasses both quantitative and qualitative elements. Internal loss data and scenario analysis results are direct inputs to the capital model, while external operational incidents, business environment and internal control factors are evaluated as part of the scenario analysis process.

In addition, we employ a variety of risk processes and mitigants to manage our operational risk exposures. These include a governance framework, a comprehensive risk management program and insurance. Operational risks and associated risk exposures are assessed relative to the risk appetite reviewed and confirmed by the Board and are prioritized accordingly.

The breadth and range of operational risk are such that the types of mitigating activities are wide-ranging. Examples of activities include: continuous enhancement of defenses against cyber attacks; use of legal agreements and contracts to transfer and/or limit operational risk exposures; due diligence; implementation of enhanced policies and procedures; technology change management controls; exception management processing controls; and segregation of duties.

Primary responsibility for the management of operational risk is with the business segments, the control groups and the business managers therein. The business managers maintain processes and controls designed to identify, assess, manage, mitigate and report operational risk. Each of the business segments has a designated operational risk coordinator. The operational risk coordinator regularly reviews operational risk issues and reports to our senior management within each business. Each control group also has a designated operational risk coordinator and a forum for discussing operational risk matters with our senior management. Oversight of operational risk is provided by the Operational Risk Oversight Committee, legal entity risk committees, regional risk committees and senior management. In the event of a merger; joint venture; divestiture; reorganization; or creation of a new legal entity, a new product, or a business activity, operational risks are considered, and any necessary changes in processes or controls are implemented.

The Operational Risk Department ("ORD") provides independent oversight of operational risk and assesses, measures and monitors operational risk against appetite. The ORD works with the divisions and control groups to embed a transparent, consistent and comprehensive framework for managing operational risk within each area and across the Firm.

The ORD scope includes oversight of technology risk, cybersecurity risk, information security risk, the fraud risk management and prevention program, and third-party risk management (supplier and affiliate risk oversight and assessment), among others.

Cybersecurity

Our cybersecurity and information security policies, procedures and technologies are designed to protect our own, our client and our employee data against unauthorized disclosure, modification or misuse and are also designed to address regulatory requirements. These policies and procedures cover a broad range of areas, including: identification of internal and external threats, access control, data security, protective controls, detection of malicious or unauthorized activity, incident response and recovery planning.

Firm Resilience

The Firm's critical processes and businesses could be disrupted by events including cyber attacks, failure or loss of access to technology and/or associated data, military conflicts, acts of terror, natural disasters, severe weather events and infectious disease. The Firm maintains a resilience program designed to provide for operational resilience and enable it to respond to and recover critical processes and supporting assets in the event of a disruption impacting our people, technology, facilities and third parties. The key elements of the Firm's resilience program include business continuity and technical recovery planning, and testing both internally and with critical third parties to validate recovery capability in accordance with business requirements. The Firm Resilience program is applied consistently Firmwide and is aligned with regulatory requirements.

Third-Party Risk Management

In connection with our ongoing operations, we utilize the services of third-party suppliers, which we anticipate will continue and may increase in the future. These services

include, for example, outsourced processing and support functions and other professional services. Our risk-based approach to managing exposure to these services includes the performance of due diligence, implementation of service level and other contractual agreements, consideration of operational risks and ongoing monitoring of third-party suppliers' performance. We maintain and continue to enhance our third-party risk management program, which is designed to align with our risk tolerance and meet regulatory requirements. The program includes appropriate governance, policies, procedures and enabling technology. The third-party risk management program includes the adoption of appropriate risk management controls and practices throughout the third-party management life cycle to manage risk of service failure, risk of data loss and reputational risk, among others.

Model Risk

Model risk refers to the potential for adverse consequences from decisions based on incorrect or misused model outputs. Model risk can lead to financial loss, poor business and strategic decision making or damage to our reputation. The risk inherent in a model is a function of the materiality, complexity and uncertainty around inputs and assumptions.

Model risk is generated from the use of models impacting financial statements, regulatory filings, capital adequacy assessments and the formulation of strategy.

Sound model risk management is an integral part of our Risk Management Framework. The Model Risk Management Department ("MRM") is a distinct department in Risk Management responsible for the oversight of model risk.

The MRM establishes a model risk tolerance in line with our risk appetite. The tolerance is based on an assessment of the materiality of the risk of financial loss or reputational damage due to errors in design, implementation and/or inappropriate use of models. The tolerance is monitored through model-specific and aggregate business-level assessments, which are based upon qualitative and quantitative factors.

A guiding principle for managing model risk is the "effective challenge" of models. The effective challenge of models is defined as critical analysis by objective, informed parties who can identify model limitations and assumptions and drive appropriate changes. The MRM provides effective challenge of models, independently validates and approves models for use, annually recertifies models, identifies and tracks remediation plans for model limitations and reports on model risk metrics. The department also oversees the development of controls to support a complete and accurate Firmwide model inventory.

Liquidity Risk

Liquidity risk refers to the risk that we will be unable to finance our operations due to a loss of access to the capital markets or difficulty in liquidating our assets. Liquidity risk also encompasses our ability (or perceived ability) to meet our financial obligations without experiencing significant business disruption or reputational damage that may threaten our viability as a going concern. Liquidity risk also encompasses the associated funding risks triggered by the market or idiosyncratic stress events that may negatively affect our liquidity and may impact our ability to raise new funding. Generally, we incur liquidity and funding risk as a result of our trading, lending, investing and client facilitation activities.

Our Liquidity Risk Management Framework is critical to helping ensure that we maintain sufficient liquidity reserves and durable funding sources to meet our daily obligations and to withstand unanticipated stress events. The Liquidity Risk Department is a distinct area in Risk Management responsible for the oversight and monitoring of liquidity risk. The Liquidity Risk Department ensures transparency of material liquidity and funding risks, compliance with established risk limits and escalation of risk concentrations to appropriate senior management.

To execute these responsibilities, the Liquidity Risk Department establishes limits in line with our risk appetite, identifies and analyzes emerging liquidity and funding risks to ensure such risks are appropriately mitigated, monitors and reports risk exposures against metrics and limits, and reviews the methodologies and assumptions underpinning our Liquidity Stress Tests to ensure sufficient liquidity and funding under a range of adverse scenarios.

The Treasury Department and applicable business units have primary responsibility for evaluating, monitoring and controlling the liquidity and funding risks arising from our business activities and for maintaining processes and controls to manage the key risks inherent in their respective areas. The Liquidity Risk Department coordinates with the Treasury Department and these business units to help ensure a consistent and comprehensive framework for managing liquidity and funding risk across the Firm. See also "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources" herein.

Legal and Compliance Risk

Legal and compliance risk includes the risk of legal or regulatory sanctions, material financial loss, including fines, penalties, judgments, damages and/or settlements, limitations on our business, or loss to reputation that we may suffer as a result of failure to comply with laws, regulations, rules, related self-regulatory organization standards and codes of conduct applicable to our business activities. This risk also includes contractual and commercial risk, such as the risk that a counterparty's performance obligations will be unenforceable. It also includes compliance with AML, terrorist financing, and anti-corruption rules and regulations. We are generally subject to extensive regulation in the different jurisdictions in which we conduct our business (see

also “Business—Supervision and Regulation” and “Risk Factors”).

We have established procedures based on legal and regulatory requirements on a worldwide basis that are designed to facilitate compliance with applicable statutory and regulatory requirements and to require that our policies relating to business conduct, ethics and practices are followed globally. In addition, we have established procedures to mitigate the risk that a counterparty’s performance obligations will be unenforceable, including consideration of counterparty legal authority and capacity, adequacy of legal documentation, the permissibility of a transaction under applicable law and whether applicable bankruptcy or insolvency laws limit or alter contractual remedies. The heightened legal and regulatory focus on the financial services and banking industries globally presents a continuing business challenge for us.

Climate Risk

Climate change manifests as physical and transition risks. The physical risks of climate change include acute events, such as flooding, hurricanes, heatwaves and wildfires, and chronic, longer-term shifts in climate patterns, such as increasing global average temperatures, rising sea levels, and droughts. Transition risks are policy, legal, technological, and market changes to address climate risks and include changes in consumer behavior, shareholder preferences, and any additional regulatory and legislative requirements, such as carbon taxes.

Climate risk, which is not expected to have a significant effect on our consolidated results of operations or financial condition in the near-term, is an overarching risk that can impact other categories of risk over the longer-term. Physical risk may lead to increased credit risk by diminishing borrowers’ repayment capacity or impacting the value of collateral. In addition, physical risk could pose increased operational risk to our facilities and people. The impacts of transition risk may lead to and amplify credit risk or market risk by reducing our customers’ operating income or the value of their assets as well as exposing us to reputational and/or litigation risk due to increased legal and regulatory scrutiny or negative public sentiment.

As climate risk is interconnected with other risk types, including geopolitical risks, we have developed and continue to enhance processes to embed climate risk considerations into our risk management strategies, established for risks such as market, credit and operational risks, as well as our governance structures. The BRC oversees Firmwide risks, which include climate risk, and, as part of its oversight, receives updates on our risk management approach to climate risk, including our approaches towards scenario analysis and integration of climate risk into our existing risk management processes. Our climate risk management efforts are overseen by the Climate Risk Committee, which is co-chaired by our Chief Risk Officer and Chief Sustainability Officer and shapes our approach to managing climate-related risks in line with our overall risk framework.

Financial Statements and Supplementary Data

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of Morgan Stanley:

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Morgan Stanley and subsidiaries (the "Firm") as of December 31, 2022 and 2021, the related consolidated income statements, comprehensive income statements, cash flow statements and statements of changes in total equity for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Firm as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Firm's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 24, 2023, expressed an unqualified opinion on the Firm's internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Firm's management. Our responsibility is to express an opinion on the Firm's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Firm in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Valuation of Level 3 Financial Assets and Liabilities Carried at Fair Value on a Recurring Basis—Refer to Note 5 to the financial statements

Critical Audit Matter Description

The Firm's trading and financing activities result in the Firm carrying material financial instruments having limited price transparency. These financial instruments can span a broad array of product types and generally include derivative, security, loan, and borrowing positions. As described in Note 5, these Level 3 financial instruments approximate $10.1 billion and $6.1 billion, respectively, of financial assets and liabilities carried at fair value on a recurring basis at December 31, 2022. Unlike financial instruments whose inputs are readily observable and, therefore, more easily independently corroborated, the valuation of financial instruments classified as Level 3 is inherently subjective and often involves the use of unobservable inputs and proprietary valuation models whose underlying algorithms and valuation methodologies are complex.

We identified the valuation of Level 3 financial assets and liabilities carried at fair value on a recurring basis as a critical audit matter given the Firm uses complex valuation models and/or model inputs that are not observable in the marketplace to determine the respective fair values. Performing our audit procedures to evaluate the appropriateness of these models and inputs involved a high degree of auditor judgment, professionals with specialized skills and knowledge, and an increased extent of testing.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the valuation of Level 3 financial assets and liabilities carried at fair value on a recurring basis included the following, among others:

- We tested the design and operating effectiveness of the Firm's internal controls that address fair value estimates, including model review and price verification. The Firm maintains these internal controls to assess the appropriateness of its valuation

methodologies and the relevant inputs and assumptions used to determine fair value estimates.

- We independently evaluated the appropriateness of management's significant valuation methodologies, including the input assumptions, considering the expected assumptions of other market participants and external data when available.
- We developed independent fair value estimates for selected Level 3 financial instruments, using externally sourced inputs and independent valuation models, and used such estimates to further evaluate management's fair value estimates. For certain of our selected Level 3 financial instruments, this included a comparison to the Firm's fair value estimates for similar transactions and an evaluation of the Firm's assumptions inclusive of the inputs, as applicable.
- We tested the revenues arising from the trade date fair value estimates for selected structured transactions classified as Level 3 financial instruments. For certain of our selected transactions, we developed independent fair value estimates to test the valuation inputs and assumptions used by the Firm and evaluated whether these methods were consistent with relevant Firm valuation policies.
- We assessed the consistency by which management has applied significant and unobservable valuation assumptions used in developing fair value estimates.
- We performed a retrospective assessment of management's fair value estimates for certain of our selected Level 3 financial instruments, for which there were events or transactions occurring after the valuation date. We did so by comparing management's estimates to the relevant evidence provided by such events or transactions, as applicable.

/s/ Deloitte & Touche LLP
New York, New York
February 24, 2023

We have served as the Firm's auditor since 1997.

Consolidated Income Statement

in millions, except per share data	**2022**	2021	2020
Revenues			
Investment banking	**$ 5,599**	$ 10,994	$ 7,674
Trading	**13,928**	12,810	13,983
Investments	**15**	1,376	986
Commissions and fees	**4,938**	5,521	4,851
Asset management	**19,578**	19,967	14,272
Other	**283**	1,042	678
Total non-interest revenues	**44,341**	51,710	42,444
Interest income	**21,595**	9,411	10,162
Interest expense	**12,268**	1,366	3,849
Net interest	**9,327**	8,045	6,313
Net revenues	**53,668**	59,755	48,757
Provision for credit losses	**280**	4	761
Non-interest expenses			
Compensation and benefits	**23,053**	24,628	20,854
Brokerage, clearing and exchange fees	**3,458**	3,341	2,929
Information processing and communications	**3,493**	3,119	2,465
Professional services	**3,070**	2,933	2,205
Occupancy and equipment	**1,729**	1,725	1,559
Marketing and business development	**905**	643	434
Other	**3,591**	3,694	3,132
Total non-interest expenses	**39,299**	40,083	33,578
Income before provision for income taxes	**14,089**	19,668	14,418
Provision for income taxes	**2,910**	4,548	3,239
Net income	**$ 11,179**	$ 15,120	$ 11,179
Net income applicable to noncontrolling interests	**150**	86	183
Net income applicable to Morgan Stanley	**$ 11,029**	$ 15,034	$ 10,996
Preferred stock dividends	**489**	468	496
Earnings applicable to Morgan Stanley common shareholders	**$ 10,540**	$ 14,566	$ 10,500
Earnings per common share			
Basic	**$ 6.23**	$ 8.16	$ 6.55
Diluted	**6.15**	8.03	6.46
Average common shares outstanding			
Basic	**1,691**	1,785	1,603
Diluted	**1,713**	1,814	1,624

Consolidated Comprehensive Income Statement

$ in millions	**2022**	2021	2020
Net income	**$ 11,179**	$ 15,120	$ 11,179
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	**(337)**	(331)	170
Change in net unrealized gains (losses) on available-for-sale securities	**(4,437)**	(1,542)	1,580
Pension and other	**43**	(53)	146
Change in net debt valuation adjustment	**1,502**	696	(1,028)
Net change in cash flow hedges	**(4)**	—	—
Total other comprehensive income (loss)	**$ (3,233)**	$ (1,230)	$ 868
Comprehensive income	**$ 7,946**	$ 13,890	$ 12,047
Net income applicable to noncontrolling interests	**150**	86	183
Other comprehensive income (loss) applicable to noncontrolling interests	**(82)**	(90)	42
Comprehensive income applicable to Morgan Stanley	**$ 7,878**	$ 13,894	$ 11,822

Consolidated Balance Sheet

Morgan Stanley

$ in millions, except share data	At December 31, 2022	At December 31, 2021
Assets		
Cash and cash equivalents	**$ 128,127**	$ 127,725
Trading assets at fair value (**$124,411** and $104,186 were pledged to various parties)	**301,315**	294,869
Investment securities (includes **$84,297** and $102,830 at fair value)	**159,931**	182,998
Securities purchased under agreements to resell (includes **$8** and $7 at fair value)	**113,907**	119,999
Securities borrowed	**133,374**	129,713
Customer and other receivables	**78,540**	96,018
Loans:		
Held for investment (net of allowance for credit losses of **$839** and $654)	**198,997**	174,302
Held for sale	**14,788**	13,832
Goodwill	**16,652**	16,833
Intangible assets (net of accumulated amortization of **$4,253** and $3,819)	**7,618**	8,360
Other assets	**26,982**	23,491
Total assets	**$ 1,180,231**	$ 1,188,140
Liabilities		
Deposits (includes **$4,796** and $1,940 at fair value)	**$ 356,646**	$ 347,574
Trading liabilities at fair value	**154,438**	158,328
Securities sold under agreements to repurchase (includes **$864** and $791 at fair value)	**62,534**	62,188
Securities loaned	**15,679**	12,299
Other secured financings (includes **$4,550** and $5,133 at fair value)	**8,158**	10,041
Customer and other payables	**216,134**	228,685
Other liabilities and accrued expenses	**27,353**	29,300
Borrowings (includes **$78,720** and $76,340 at fair value)	**238,058**	233,127
Total liabilities	**1,079,000**	1,081,542
Commitments and contingent liabilities (see Note 15)		
Equity		
Morgan Stanley shareholders' equity:		
Preferred stock	**8,750**	7,750
Common stock, $0.01 par value:		
Shares authorized: **3,500,000,000**; Shares issued: **2,038,893,979**; Shares outstanding: **1,675,487,409** and 1,772,226,530	**20**	20
Additional paid-in capital	**29,339**	28,841
Retained earnings	**94,862**	89,432
Employee stock trusts	**4,881**	3,955
Accumulated other comprehensive income (loss)	**(6,253)**	(3,102)
Common stock held in treasury at cost, $0.01 par value (**363,406,570** and 266,667,449 shares)	**(26,577)**	(17,500)
Common stock issued to employee stock trusts	**(4,881)**	(3,955)
Total Morgan Stanley shareholders' equity	**100,141**	105,441
Noncontrolling interests	**1,090**	1,157
Total equity	**101,231**	106,598
Total liabilities and equity	**$ 1,180,231**	$ 1,188,140

Consolidated Statement of Changes in Total Equity

$ in millions	2022	2021	2020
Preferred Stock			
Beginning balance	$ 7,750	$ 9,250	$ 8,520
Issuance of preferred stock	**1,000**	1,300	730
Redemption of preferred stock	**—**	(2,800)	—
Ending balance	**8,750**	7,750	9,250
Common Stock			
Beginning and ending balance	**20**	20	20
Additional Paid-in Capital			
Beginning balance	28,841	25,546	23,935
Share-based award activity	**503**	1,117	518
Issuance of preferred stock	**(6)**	(25)	—
Issuance of common stock for the acquisition of Eaton Vance	**—**	2,185	—
Issuance of common stock for the acquisition of E*TRADE	**—**	—	1,093
Other net increases (decreases)	**1**	18	—
Ending balance	**29,339**	28,841	25,546
Retained Earnings			
Beginning balance	89,432	78,694	70,589
Cumulative adjustment related to the adoption of the financial instruments-credit losses accounting update[1]	**—**	—	(100)
Net income applicable to Morgan Stanley	**11,029**	15,034	10,996
Preferred stock dividends[2]	**(489)**	(468)	(496)
Common stock dividends[2]	**(5,108)**	(3,818)	(2,295)
Other net increases (decreases)	**(2)**	(10)	—
Ending balance	**94,862**	89,432	78,694
Employee Stock Trusts			
Beginning balance	3,955	3,043	2,918
Share-based award activity	**926**	912	125
Ending balance	**4,881**	3,955	3,043
Accumulated Other Comprehensive Income (Loss)			
Beginning balance	(3,102)	(1,962)	(2,788)
Net change in Accumulated other comprehensive income (loss)	**(3,151)**	(1,140)	826
Ending balance	**(6,253)**	(3,102)	(1,962)
Common Stock Held in Treasury at Cost			
Beginning balance	(17,500)	(9,767)	(18,727)
Share-based award activity	**1,794**	1,210	932
Repurchases of common stock and employee tax withholdings	**(10,871)**	(12,075)	(1,890)
Issuance of common stock for the acquisition of Eaton Vance	**—**	3,132	—
Issuance of common stock for the acquisition of E*TRADE	**—**	—	9,918
Ending balance	**(26,577)**	(17,500)	(9,767)
Common Stock Issued to Employee Stock Trusts			
Beginning balance	(3,955)	(3,043)	(2,918)
Share-based award activity	**(926)**	(912)	(125)
Ending balance	**(4,881)**	(3,955)	(3,043)
Noncontrolling Interests			
Beginning balance	1,157	1,368	1,148
Net income applicable to noncontrolling interests	**150**	86	183
Net change in Accumulated other comprehensive income (loss) applicable to noncontrolling interests	**(82)**	(90)	42
Other net increases (decreases)	**(135)**	(207)	(5)
Ending balance	**1,090**	1,157	1,368
Total Equity	**$ 101,231**	$ 106,598	$ 103,149

1. See Note 2 for further information regarding cumulative adjustments for accounting changes.
2. See Note 18 for information regarding dividends per share for each class of stock.

Table of Contents

Consolidated Cash Flow Statement

$ in millions	**2022**	2021	2020
Cash flows from operating activities			
Net income	**$ 11,179**	$ 15,120	$ 11,179
Adjustments to reconcile net income to net cash provided by (used for) operating activities:			
Deferred income taxes	**(849)**	4	(250)
Stock-based compensation expense	**1,875**	2,085	1,312
Depreciation and amortization	**3,998**	4,216	3,769
Provision for credit losses	**280**	4	761
Other operating adjustments	**618**	(147)	274
Changes in assets and liabilities:			
Trading assets, net of Trading liabilities	**(39,422)**	9,075	15,551
Securities borrowed	**(3,661)**	(17,322)	(5,076)
Securities loaned	**3,380**	4,568	(1,541)
Customer and other receivables and other assets	**14,664**	774	(29,774)
Customer and other payables and other liabilities	**(4,897)**	7,758	10,187
Securities purchased under agreements to resell	**6,092**	(3,765)	(28,010)
Securities sold under agreements to repurchase	**346**	11,601	(3,613)
Net cash provided by (used for) operating activities	**(6,397)**	33,971	(25,231)
Cash flows from investing activities			
Proceeds from (payments for):			
Other assets—Premises, equipment and software, net	**(3,078)**	(2,308)	(1,444)
Changes in loans, net	**(23,652)**	(36,106)	(17,949)
AFS securities[1]:			
Purchases	**(24,602)**	(42,469)	(39,478)
Proceeds from sales	**22,014**	20,652	13,750
Proceeds from paydowns and maturities	**13,435**	26,375	15,664
HTM securities[1]:			
Purchases	**(5,231)**	(27,102)	(20,299)
Proceeds from paydowns and maturities	**9,829**	14,541	8,853
Cash paid as part of the Eaton Vance acquisition, net of cash acquired	**—**	(2,648)	—
Cash acquired as part of the E*TRADE acquisition	**—**	—	3,807
Other investing activities	**(347)**	(832)	(802)
Net cash provided by (used for) investing activities	**(11,632)**	(49,897)	(37,898)
Cash flows from financing activities			
Net proceeds from (payments for):			
Other secured financings	**(884)**	(625)	2,794
Deposits	**1,659**	36,897	75,417
Issuance of preferred stock, net of issuance costs	**994**	1,275	—
Proceeds from issuance of Borrowings	**72,460**	90,273	60,726
Payments for:			
Borrowings	**(34,898)**	(70,124)	(50,484)
Repurchases of common stock and employee tax withholdings	**(10,871)**	(12,075)	(1,890)
Cash dividends	**(5,401)**	(4,171)	(2,739)
Other financing activities	**(345)**	97	(40)
Net cash provided by (used for) financing activities	**22,714**	41,547	83,784
Effect of exchange rate changes on cash and cash equivalents	**(4,283)**	(3,550)	2,828
Net increase (decrease) in cash and cash equivalents	**402**	22,071	23,483
Cash and cash equivalents, at beginning of period	**127,725**	105,654	82,171
Cash and cash equivalents, at end of period	**$ 128,127**	$ 127,725	$ 105,654

Supplemental Disclosure of Cash Flow Information			
Cash payments for:			
Interest	**$ 9,819**	$ 1,303	$ 4,120
Income taxes, net of refunds	**4,147**	4,231	2,591

1. The prior period amounts have been revised to present Purchases, Proceeds from sales and Proceeds from paydowns and maturities separately between AFS securities and HTM securities.

1. Introduction and Basis of Presentation

The Firm

Morgan Stanley is a global financial services firm that maintains significant market positions in each of its business segments—Institutional Securities, Wealth Management and Investment Management. Morgan Stanley, through its subsidiaries and affiliates, provides a wide variety of products and services to a large and diversified group of clients and customers, including corporations, governments, financial institutions and individuals. Unless the context otherwise requires, the terms "Morgan Stanley" or the "Firm" mean Morgan Stanley (the "Parent Company") together with its consolidated subsidiaries. Disclosures reflect the effects of the acquisition of Eaton Vance Corp. ("Eaton Vance") and E*TRADE Financial Corporation ("E*TRADE") prospectively from the acquisition dates, March 1, 2021 and October 2, 2020, respectively. See Note 3 to the financial statements for further information. See the "Glossary of Common Terms and Acronyms" for the definition of certain terms and acronyms used throughout this Form 10-K.

A description of the clients and principal products and services of each of the Firm's business segments is as follows:

Institutional Securities provides a variety of products and services to corporations, governments, financial institutions and ultra-high net worth clients. Investment Banking services consist of capital raising and financial advisory services, including the underwriting of debt, equity and other securities, as well as advice on mergers and acquisitions, restructurings and project finance. Our Equity and Fixed Income businesses include sales, financing, prime brokerage, market-making, Asia wealth management services and certain business-related investments. Lending activities include originating corporate loans and commercial real estate loans, providing secured lending facilities, and extending securities-based and other financing to customers. Other activities include research.

Wealth Management provides a comprehensive array of financial services and solutions to individual investors and small to medium-sized businesses and institutions covering: financial advisor-led brokerage, custody, administrative and investment advisory services; self-directed brokerage services; financial and wealth planning services; workplace services, including stock plan administration; securities-based lending, residential real estate loans and other lending products; banking; and retirement plan services.

Investment Management provides a broad range of investment strategies and products that span geographies, asset classes, and public and private markets to a diverse group of clients across institutional and intermediary channels. Strategies and products, which are offered through a variety of investment vehicles, include equity, fixed income, alternatives and solutions, and liquidity and overlay services. Institutional clients include defined benefit/defined contribution plans, foundations, endowments, government entities, sovereign wealth funds, insurance companies, third-party fund sponsors and corporations. Individual clients are generally served through intermediaries, including affiliated and non-affiliated distributors.

Basis of Financial Information

The financial statements are prepared in accordance with U.S. GAAP, which requires the Firm to make estimates and assumptions regarding the valuations of certain financial instruments, the valuations of goodwill and intangible assets, the outcome of legal and tax matters, deferred tax assets, ACL, and other matters that affect its financial statements and related disclosures. The Firm believes that the estimates utilized in the preparation of its financial statements are prudent and reasonable. Actual results could differ materially from these estimates.

The Notes are an integral part of the Firm's financial statements. The Firm has evaluated subsequent events for adjustment to or disclosure in these financial statements through the date of this report and has not identified any recordable or disclosable events not otherwise reported in these financial statements or the notes thereto.

Consolidation

The financial statements include the accounts of the Firm, its wholly owned subsidiaries and other entities in which the Firm has a controlling financial interest, including certain VIEs (see Note 16). Intercompany balances and transactions have been eliminated. For consolidated subsidiaries that are not wholly owned, the third-party holdings of equity interests are referred to as Noncontrolling interests. The net income attributable to Noncontrolling interests for such subsidiaries is presented as Net income applicable to noncontrolling interests in the income statement. The portion of shareholders' equity that is attributable to noncontrolling interests for such subsidiaries is presented as Noncontrolling interests, a component of Total equity, in the balance sheet.

For entities where the total equity investment at risk is sufficient to enable the entity to finance its activities without additional subordinated financial support and the equity holders bear the residual economic risks and returns of the entity and have the power to direct the activities of the entity that most significantly affect its economic performance, the Firm consolidates those entities it controls either through a majority voting interest or otherwise. For VIEs (*i.e.*, entities that do not meet the aforementioned criteria), the Firm consolidates those entities where it has the power to make the decisions that most significantly affect the economic performance of the VIE and has the obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE.

For investments in entities in which the Firm does not have a controlling financial interest but has significant influence over operating and financial decisions, it applies the equity method of accounting with net gains and losses recorded within Other revenues (see Note 12) unless the Firm has elected to measure the investment at fair value, in which case net gains and losses are recorded within Investments revenues (see Note 5).

Equity and partnership interests held by entities qualifying for accounting purposes as investment companies are carried at fair value.

The Firm's significant regulated U.S. and international subsidiaries include:

- Morgan Stanley & Co. LLC ("MS&Co."),
- Morgan Stanley Smith Barney LLC ("MSSB"),
- Morgan Stanley Europe SE ("MSESE"),
- Morgan Stanley & Co. International plc ("MSIP"),
- Morgan Stanley Capital Services LLC ("MSCS"),
- Morgan Stanley Capital Group Inc. ("MSCG"),
- Morgan Stanley MUFG Securities Co., Ltd. ("MSMS"),
- Morgan Stanley Bank, N.A. ("MSBNA"),
- Morgan Stanley Private Bank, National Association ("MSPBNA") and
- E*TRADE Securities LLC.

For further information on the Firm's significant regulated U.S. and international subsidiaries, see Note 17.

2. Significant Accounting Policies

Revenue Recognition

Revenues are recognized when the promised goods or services are delivered to our customers in an amount that is based on the consideration the Firm expects to receive in exchange for those goods or services when such amounts are not probable of significant reversal.

Investment Banking

Revenues from investment banking activities consist of revenues earned from underwriting, primarily equity and fixed income securities and loan syndications, and advisory fees, primarily for mergers, acquisitions and restructurings.

Underwriting revenues are generally recognized on trade date if there is no uncertainty or contingency related to the amount to be paid. Underwriting costs are deferred and recognized in the relevant non-interest expenses line items when the related underwriting revenues are recorded.

Advisory fees are recognized as advice is provided to the client, based on the estimated progress of work and when revenues are not probable of a significant reversal. Advisory costs are recognized as incurred in the relevant non-interest expenses line items, including those reimbursed.

Commissions and Fees

Commission and fee revenues generally result from transaction-based arrangements in which the client is charged a fee for the execution of transactions. Such revenues primarily arise from transactions in equity securities; services related to sales and trading activities; and sales of mutual funds, alternative funds, futures, insurance products and options, as well as revenues from order flow payments for directing customer orders to broker-dealers, exchanges, and market centers for execution. Commission and fee revenues are recognized on trade date when the performance obligation is satisfied.

Asset Management Revenues

Asset management, distribution and administration fees are generally based on related asset levels being managed, such as the AUM of a customer's account or the net asset value of a fund. These fees are generally recognized when services are performed and the fees become known. Management fees are reduced by estimated fee waivers and expense caps, if any, provided to the customer.

Performance-based fees not in the form of carried interest are recorded when the annual performance target is met and the revenues are not probable of a significant reversal.

Sales commissions paid by the Firm in connection with the sale of certain classes of shares of its open-end mutual fund products are accounted for as deferred commission assets and amortized to expense over the expected life of the contract. The Firm periodically tests deferred commission assets for recoverability based on cash flows expected to be received in future periods. Other asset management and distribution costs are recognized as incurred in the relevant non-interest expenses line items.

Carried Interest

The Firm is entitled to receive performance-based fees in the form of carried interest when the return in certain funds exceeds specified performance targets. When the Firm earns carried interest from funds as specified performance thresholds are met, that carried interest and any related general or limited partner interest are accounted for under the equity method of accounting and measured based on the Firm's claim on the NAV of the fund at the reporting date, taking into account the distribution terms applicable to the interest held. Such items are reflected within Investment revenues.

See Note 23 for information regarding the net cumulative unrealized amount of performance-based fee revenues at risk of reversal. See Note 15 for information regarding general partner guarantees, which include potential obligations to return performance fee distributions previously received.

Other Items

Revenues from certain commodities-related contracts are recognized as the promised goods or services are delivered to the customer.

Receivables from contracts with customers are recognized in Customer and other receivables in the balance sheet when the underlying performance obligations have been satisfied and the Firm has the right per the contract to bill the customer. Contract assets are recognized in Other assets when the Firm has satisfied its performance obligations but customer payment is conditional on something other than the passage of time. Contract liabilities are recognized in Other liabilities when the Firm has collected payment from a customer based on the terms of the contract but the underlying performance obligations are not yet satisfied.

For contracts with a term of less than one year, incremental costs to obtain the contract are expensed as incurred. Revenues are not discounted when payment is expected within one year.

The Firm generally presents, net within revenues, taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction and collected by the Firm from a customer.

Cash and Cash Equivalents

Cash and cash equivalents consist of Cash and due from banks and Interest bearing deposits with banks. Cash equivalents are highly liquid investments with remaining maturities of three months or less from the acquisition date that are readily convertible to cash and are not held for trading purposes.

Cash and cash equivalents also include Restricted cash such as cash segregated in compliance with federal or other regulations, including minimum reserve requirements set by the Federal Reserve Bank and other central banks, and the Firm's initial margin deposited with clearing organizations.

Fair Value of Financial Instruments

Instruments within Trading assets and Trading liabilities are measured at fair value, either as required or allowed by accounting guidance. These financial instruments primarily represent the Firm's trading and investment positions and include both cash and derivative products. In addition, securities classified as Available-for-Sale ("AFS") are measured at fair value.

Gains and losses on instruments carried at fair value are reflected in Trading revenues, Investments revenues or Investment banking revenues in the income statement, except for gains and losses related to AFS securities (see "AFS Investment Securities" section herein and Note 8) and derivatives accounted for as hedges, as well as economic derivative hedges associated with certain held-for-sale and held-for-investment corporate loans and lending commitments (see "Hedge Accounting" and "Other Hedges" herein and Note 7).

Interest income and interest expense are recorded within the income statement depending on the nature of the instrument and related market conventions. When interest is included as a component of the instruments' fair value, interest is recorded within Trading revenues or Investments revenues. Otherwise, it is recorded within Interest income or Interest expense. Dividend income is recorded in Trading revenues or Investments revenues depending on the business activity.

The fair value of OTC financial instruments, including derivative contracts related to financial instruments and commodities, is presented in the accompanying balance sheet on a net-by-counterparty basis, when appropriate. Additionally, the Firm nets the fair value of cash collateral paid or received against the fair value amounts recognized for net derivative positions executed with the same counterparty under the same master netting agreement.

Fair Value Option

The Firm has elected to measure certain eligible instruments at fair value, including Securities purchased under agreements to resell, Loans and lending commitments, equity method investments and certain other assets, Deposits, Securities sold under agreements to repurchase, Other secured financings and Borrowings.

Fair Value Measurement—Definition and Hierarchy

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (*i.e.,* the "exit price") in an orderly transaction between market participants at the measurement date.

Fair value is a market-based measure considered from the perspective of a market participant rather than an entity-specific measure. Therefore, even when market assumptions are not readily available, assumptions are set to reflect those that the Firm believes market participants would use in pricing the asset or liability at the measurement date. Where the Firm manages a group of financial assets, financial liabilities, and nonfinancial items accounted for as derivatives on the basis of its net exposure to either market risks or credit risk, the Firm measures the fair value of that group of financial instruments consistently with how market participants would price the net risk exposure at the measurement date.

In determining fair value, the Firm uses various valuation approaches and establishes a hierarchy for inputs used in measuring fair value that requires the most observable inputs be used when available.

Observable inputs are inputs that market participants would use in pricing the asset or liability that were developed based on market data obtained from sources independent of the

Firm. Unobservable inputs are inputs that reflect assumptions the Firm believes other market participants would use in pricing the asset or liability that are developed based on the best information available in the circumstances. The fair value hierarchy is broken down into three levels based on the observability of inputs as follows, with Level 1 being the highest and Level 3 being the lowest level:

Level 1. Valuations based on quoted prices in active markets that the Firm has the ability to access for identical assets or liabilities. Valuation adjustments, block discounts and discounts for entity-specific restrictions that would not transfer to market participants are not applied to Level 1 instruments. Since valuations are based on quoted prices that are readily and regularly available in an active market, valuation of these products does not entail a significant degree of judgment.

Level 2. Valuations based on one or more quoted prices in markets that are not active or for which all significant inputs are observable, either directly or indirectly.

Level 3. Valuations based on inputs that are unobservable and significant to the overall fair value measurement.

The availability of observable inputs can vary from product to product and is affected by a wide variety of factors, including the type of product, whether the product is new and not yet established in the marketplace, the liquidity of markets and other characteristics particular to the product. To the extent that valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised by the Firm in determining fair value is greatest for instruments categorized in Level 3 of the fair value hierarchy.

The Firm considers prices and inputs that are current as of the measurement date, including during periods of market dislocation. In periods of market dislocation, the observability of prices and inputs may be reduced for many instruments. This condition could cause an instrument to be reclassified from Level 1 to Level 2 or from Level 2 to Level 3 of the fair value hierarchy.

In certain cases, the inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, the total fair value amount is disclosed in the level appropriate for the lowest level input that is significant to the total fair value of the asset or liability.

Valuation Techniques

Many cash instruments and OTC derivative contracts have bid and ask prices that can be observed in the marketplace. Bid prices reflect the highest price that a party is willing to pay for an asset. Ask prices represent the lowest price that a party is willing to accept for an asset. The Firm carries positions at the point within the bid-ask range that meets its best estimate of fair value. For offsetting positions in the same financial instrument, the same price within the bid-ask spread is used to measure both the long and short positions.

Fair value for many cash instruments and OTC derivative contracts is derived using pricing models. Pricing models take into account the contract terms, as well as multiple inputs, including, where applicable, commodity prices, equity prices, interest rate yield curves, credit curves, correlation, creditworthiness of the counterparty, creditworthiness of the Firm, option volatility and currency rates.

Where appropriate, valuation adjustments are made to account for various factors such as liquidity risk (bid-ask adjustments), credit quality, model uncertainty, and concentration risk and funding in order to arrive at fair value. Adjustments for liquidity risk adjust model-derived mid-market amounts of Level 2 and Level 3 financial instruments for the bid-mid or mid-ask spread required to properly reflect the exit price of a risk position. Bid-mid and mid-ask spreads are marked to levels observed in trade activity, broker quotes or other external third-party data. Where these spreads are unobservable for the particular position in question, spreads are derived from observable levels of similar positions.

The Firm applies credit-related valuation adjustments to its Borrowings for which the fair value option was elected and to OTC derivatives. The Firm considers the impact of changes in its own credit spreads based upon observations of the secondary bond market spreads when measuring the fair value for Borrowings.

For OTC derivatives, the impact of changes in both the Firm's and the counterparty's credit rating is considered when measuring fair value. In determining the expected exposure, the Firm simulates the distribution of the future exposure to a counterparty, then applies market-based default probabilities to the future exposure, leveraging external third-party CDS spread data. Where CDS spread data are unavailable for a specific counterparty, bond market spreads, CDS spread data based on the counterparty's credit rating or CDS spread data that reference a comparable counterparty may be utilized. The Firm also considers collateral held and legally enforceable master netting agreements that mitigate its exposure to each counterparty.

Adjustments for model uncertainty are taken for positions whose underlying models are reliant on significant inputs that are neither directly nor indirectly observable, hence requiring reliance on established theoretical concepts in their derivation. These adjustments are derived by making assessments of the possible degree of variability using statistical approaches and market-based information where possible.

The Firm may apply concentration adjustments to certain of its OTC derivative portfolios to reflect the additional cost of closing out a particularly large risk exposure. Where possible, these adjustments are based on observable market information, but in many instances, significant judgment is required to estimate the costs of closing

out concentrated risk exposures due to the lack of liquidity in the marketplace.

The Firm applies an FVA in the fair value measurements of OTC uncollateralized or partially collateralized derivatives and in collateralized derivatives where the terms of the agreement do not permit the reuse of the collateral received. In general, FVA reflects a market funding risk premium inherent in the noted derivative instruments. The methodology for measuring FVA leverages the Firm's existing credit-related valuation adjustment calculation methodologies, which apply to both assets and liabilities.

See Note 5 for a description of valuation techniques applied to the major categories of financial instruments measured at fair value.

Assets and Liabilities Measured at Fair Value on a Non-recurring Basis

Certain of the Firm's assets and liabilities are measured at fair value on a non-recurring basis. The Firm incurs losses or gains for any adjustments of these assets or liabilities to fair value.

For assets and liabilities measured at fair value on a non-recurring basis, fair value is determined by using various valuation approaches. The same hierarchy for inputs as described above, which requires that observable inputs be used when available, is used in measuring fair value for these items.

For further information on financial assets and liabilities that are measured at fair value on a recurring and non-recurring basis, see Note 5.

Offsetting of Derivative Instruments

In connection with its derivative activities, the Firm generally enters into master netting agreements and collateral agreements with its counterparties. These agreements provide the Firm with the right, in the event of a default by the counterparty, to net a counterparty's rights and obligations under the agreement and to liquidate and set off cash collateral against any net amount owed by the counterparty. Derivatives with enforceable master netting agreements are reported net of cash collateral received and posted.

However, in certain circumstances, the Firm may not have such an agreement in place; the relevant insolvency regime may not support the enforceability of the master netting agreement or collateral agreement; or the Firm may not have sought legal advice to support the enforceability of the agreement. In cases where the Firm has not determined an agreement to be enforceable, the related amounts are not offset (see Note 7).

The Firm's policy is generally to receive cash and/or securities posted as collateral (with rights of rehypothecation), irrespective of the enforceability determination regarding the master netting and collateral agreement. In certain cases, the Firm may agree for such collateral to be posted to a third-party custodian under a control agreement that enables it to take control of such collateral in the event of a counterparty default. The enforceability of the master netting agreement is taken into account in the Firm's risk management practices and application of counterparty credit limits.

For information related to offsetting of derivatives, see Note 7.

Hedge Accounting

The Firm applies hedge accounting using various derivative financial instruments for the following types of hedges: hedges of changes in the fair value of assets and liabilities due to the risk being hedged (fair value hedges); hedges of variability in forecasted cash flows from floating-rate assets due to contractually specified interest rates (cash flow hedges) and hedges of net investments in foreign operations whose functional currency is different from the reporting currency of the Parent Company (net investment hedges). These financial instruments are included within Trading assets—Derivative and other contracts or Trading liabilities—Derivative and other contracts in the balance sheet. For hedges where hedge accounting is being applied, the Firm performs effectiveness testing and other procedures. The change in the fair value of the designated portion of the hedging instrument should be highly correlated, between 80 and 125 percent of the change in the fair value, cash flows, or carrying value (due to translation gains or losses) of the hedged item attributable to the risk being hedged. The Firm considers the impact of valuation adjustments related to counterparty credit spreads and its own credit spreads to determine whether they would cause the hedging relationship to be ineffective.

Fair Value Hedges—Interest Rate Risk

The Firm's designated fair value hedges consist of interest rate swaps designated as hedges of changes in the benchmark interest rate of certain fixed rate AFS securities and senior borrowings. The Firm also designates interest rate swaps as fair value hedges of changes in the benchmark interest rate of certain fixed rate deposits. The Firm is permitted to hedge the full, or part of the contractual term of the hedged instrument. The Firm uses regression analysis to perform an ongoing prospective and retrospective assessment of the effectiveness of these hedging relationships. For qualifying fair value hedges of benchmark interest rates, the change in the fair value of the derivative, offset by the change in the fair value attributable to the change in the benchmark interest rate risk of the hedged asset (liability), is recognized in earnings each period as a component of Interest income (expense). For AFS securities, the change in fair value of the hedged item due to changes other than the risk being hedged will continue to be reported in OCI. When a derivative is de-designated as a hedge, any basis adjustment remaining on the hedged asset (liability) is amortized to Interest income (expense) over the

remaining life of the asset (liability) using the effective interest method.

Net Investment Hedges

The Firm uses forward foreign exchange contracts to manage a portion of the currency exposure relating to its net investments in foreign operations. To the extent that the notional amounts of the hedging instruments equal the portion of the investments being hedged and the underlying exchange rate of the derivative hedging instrument is the same as the exchange rate between the functional currency of the investee and the intermediate parent entity's functional currency, it is considered to be perfectly effective, with no income statement recognition. The gain or loss from revaluing hedges of net investments in foreign operations at the spot rate is reported within AOCI. The forward points on the hedging instruments are excluded from hedge effectiveness testing and changes in the fair value of this excluded component are recorded currently in Interest income.

Cash Flow Hedges—Interest Rate Risk

The Firm's designated cash flow hedges consist of interest rate derivatives designated as hedges of variability in forecasted cash flows from floating-rate assets due to changes in the contractually specified interest rates. The Firm uses regression analysis to perform an ongoing prospective and retrospective assessment of the effectiveness of these hedging relationships.

The objective of this strategy is to hedge the risk of changes in the hedged item's cash flows attributable to changes in the contractually specified interest rate. For qualifying cash flow hedges of contractually specified interest rates, changes in the fair value of the derivative are recorded in OCI and subsequently reclassified to earnings in the same periods when the hedged item affects earnings. If cash flow hedge accounting is discontinued, AOCI is released into earnings immediately if the cash flow of the hedged item is probable of not occurring. Otherwise the amount in AOCI is released into earnings as the forecasted transaction affects earnings.

Other Hedges

In addition to hedges that are designated and qualify for hedge accounting, the Firm uses derivatives to economically hedge credit risk associated with certain held-for-sale and held-for-investment corporate loans and lending commitments, and the related gains and losses are reported within Other revenues in the income statement.

For further information on derivative instruments and hedging activities, see Note 7.

AFS Investment Securities

AFS securities are reported at fair value in the balance sheet. Interest income, including amortization of premiums and accretion of discounts, is included in Interest income in the income statement. Unrealized gains are recorded in OCI, and unrealized losses are recorded either in OCI or in Other revenues as described below.

AFS securities in an unrealized loss position are first evaluated to determine whether there is an intent to sell or it is more likely than not the Firm will be required to sell before recovery of the amortized cost basis. If so, the amortized cost basis is written down to the fair value of the security such that the entire unrealized loss is recognized in Other revenues, and any previously established ACL is written off.

For all other AFS securities in an unrealized loss position, any portion of unrealized losses representing a credit loss is recognized in Other revenues and as an increase to the ACL for AFS securities, with the remainder of unrealized losses recognized in OCI. A credit loss exists if the Firm does not expect to recover the amortized cost basis of the security. When considering whether a credit loss exists, the Firm considers relevant information, including:

- guarantees (implicit or explicit) by the U.S. government;
- the extent to which the fair value has been less than the amortized cost basis;
- adverse conditions specifically related to the security, its industry or geographic area;
- changes in the financial condition of the issuer of the security or, in the case of an asset-backed debt security, changes in the financial condition of the underlying loan obligors;
- the payment structure of the debt security and the likelihood of the issuer being able to make payments that increase in the future;
- failure of the issuer of the security to make scheduled interest or principal payments;
- the current rating and any changes to the rating of the security by a rating agency.

If a credit loss exists, the Firm measures the credit loss as the difference between the present value of cash flows expected to be collected (discounted at the implicit interest rate at acquisition of the security or discounted at the effective yield for securities that incorporate changes in prepayment assumptions) and the amortized cost basis of the security. Changes in prepayment assumptions alone are not considered to result in a credit loss. When estimating the present value of expected cash flows, information utilized includes the remaining payment terms of the security, prepayment speeds, financial condition of the issuer, expected defaults and the value of any underlying collateral.

Presentation of ACL and Provision for Credit Losses

	ACL	Provision for Credit Losses
AFS securities	Contra investment securities	Other revenue

Nonaccrual & ACL Charge-offs on AFS Securities

AFS securities follow the same nonaccrual and write-off guidance as discussed in "Allowance for Credit Losses" herein.

HTM Securities

HTM securities are reported at amortized cost, net of any ACL, in the balance sheet. Refer to "Allowance for Credit Losses" herein for guidance on the ACL determination. Interest income, including amortization of premiums and accretion of discounts on HTM securities, is included in Interest income in the income statement.

Loans

The Firm accounts for loans based on the following categories: loans held for investment; loans held for sale; and loans at fair value.

Nonaccrual

All loan categories described below follow the same nonaccrual and write-off guidance as discussed in "Allowance for Credit Losses" herein.

Loans Held for Investment

Loans held for investment are reported at outstanding principal adjusted for any charge-offs, the allowance for credit losses, any unamortized deferred fees or costs for originated loans, and any unamortized premiums or discounts for purchased loans.

Interest Income. Interest income on performing loans held for investment is accrued and recognized as interest income at the contractual rate of interest. Purchase price discounts or premiums, as well as net deferred loan fees or costs, are amortized into interest income over the life of the loan to produce a level rate of return.

Lending Commitments. The Firm records the liability and related expense for the credit exposure related to commitments to fund loans. For more information regarding loan commitments, standby letters of credit and financial guarantees, see Note 15.

For more information regarding allowance for credit losses, refer to "Allowance for Credit Losses" herein.

Loans Held for Sale

Loans held for sale are measured at the lower of amortized cost or fair value, with valuation changes recorded in Other revenues. The Firm determines the valuation allowance on an individual loan basis, except for residential mortgage loans for which the valuation allowance is determined at the loan product level. Any decreases in fair value below the initial carrying amount and any recoveries in fair value up to the initial carrying amount are recorded in Other revenues. Increases in fair value above initial carrying value are not recognized.

Interest Income. Interest income on loans held for sale is accrued and recognized based on the contractual rate of interest. Loan origination fees or costs and purchase price discounts or premiums are deferred as an adjustment to the loan's cost basis until the related loan is sold and, as such, are included in the periodic determination of the lower of cost or fair value adjustments and the gain or loss recognized at the time of sale.

Lending Commitments. Commitments to fund mortgage loans held for sale are derivatives and are reported in Trading assets or Trading liabilities in the balance sheet with an offset to Trading revenues in the income statement.

For commitments to fund non-mortgage loans, the Firm records the liability and related expense for the fair value exposure below cost of such commitments in Other liabilities and accrued expenses in the balance sheet with an offset to Other revenues in the income statement.

Because loans and lending commitments held for sale are recognized at the lower of cost or fair value, the allowance for credit losses and charge-off policies do not apply to these loans.

Loans at Fair Value

Loans for which the fair value option is elected are carried at fair value, with changes in fair value recognized in earnings. For further information on loans carried at fair value and classified as Trading assets and Trading liabilities, see Note 5.

Lending Commitments. The Firm records the liability and related expense for the fair value exposure related to commitments to fund loans that will be measured at fair value. The liability is recorded in Trading liabilities in the balance sheet, and the expense is recorded in Trading revenues in the income statement.

Because such loans and lending commitments are reported at fair value, the allowance for credit losses and charge-off policies do not apply to these loans.

For further information on loans, see Note 10.

Allowance for Credit Losses

The ACL for financial instruments measured at amortized cost and certain off-balance sheet exposures (*e.g.,* HFI loans and lending commitments, HTM securities, customer and other receivables and certain guarantees) represents an estimate of expected credit losses over the entire life of the financial instrument.

Factors considered by management when determining the ACL include payment status, fair value of collateral and

expected payments of principal and interest, as well as internal or external information relating to past events, current conditions, and reasonable and supportable forecasts. The Firm uses three forecasts that include assumptions about certain macroeconomic variables, including, but not limited to, U.S. gross domestic product ("GDP"), equity market indices and unemployment rates, as well as commercial real estate and home price indices. At the conclusion of the Firm's reasonable and supportable forecast period of 13 quarters, there is a gradual reversion back to historical averages.

The ACL is measured on a collective basis when similar risk characteristics exist for multiple instruments, considering all available information relevant to assessing the collectability of cash flows. Generally, the Firm applies a probability of default/loss given default model for instruments that are collectively assessed, under which the ACL is calculated as the product of probability of default, loss given default and exposure at default. These parameters are forecast for each collective group of assets using a scenario-based statistical model.

If the instrument does not share similar risk characteristics with other instruments, including when it is probable that the Firm will be unable to collect the full payment of principal and interest on the instrument when due, the ACL is measured on an individual basis. The Firm generally applies a discounted cash flow method for instruments that are individually assessed.

The Firm may also elect to use an approach that considers the fair value of the collateral when measuring the ACL if the loan is collateral dependent (*i.e.,* repayment of the loan is expected to be provided substantially by the sale or operation of the underlying collateral and the borrower is experiencing financial difficulty).

Additionally, the Firm can elect to use an approach to measure the ACL that considers the fair value of collateral where the borrower is required to, and reasonably expected to, continually adjust and replenish the amount of collateral securing the instrument to reflect changes in the fair value of such collateral. The Firm has elected to use this approach for certain securities-based loans, margin loans, securities purchased under agreements to resell and securities borrowed.

Credit quality indicators considered in developing the ACL include:

- Corporate loans, secured lending facilities, commercial real estate loans and securities, and other loans: Internal risk ratings developed by the CRM that are refreshed at least annually, and more frequently as necessary. These ratings generally correspond to external ratings published by S&P. The Firm also considers transaction structure, including type of collateral, collateral terms and position of the obligation within the capital structure. In addition, for commercial real estate, the Firm considers property type and location, net operating income and LTV ratios, among other factors, as well as commercial real estate price and credit spread indices and capitalization rates.
- Residential real estate loans: Loan origination Fair Isaac Corporation ("FICO") credit scores as determined by independent credit agencies in the U.S. and LTV ratios.
- Employee loans: Employment status, which includes those currently employed by the Firm and for which the Firm can deduct any unpaid amounts due to it through certain compensation arrangements; and those no longer employed by the Firm where such arrangements are no longer applicable.

Qualitative and environmental factors such as economic and business conditions, the nature and volume of the portfolio, and lending terms and the volume and severity of past due loans are also considered in the ACL calculations.

Presentation of ACL and Provision for Credit Losses

	ACL	Provision for Credit Losses
Held for investment loans	Contra asset	Provision for credit losses
Other instruments measured at amortized cost (*e.g.,* HTM securities and customer and other receivables)	Contra asset	Other revenues
Employee loans	Contra asset	Compensation and benefits expenses
Held for investment lending commitments	Other liabilities and accrued expenses	Provision for credit losses
Other off-balance sheet instruments (*e.g.,* certain guarantees)	Other liabilities and accrued expenses	Other expenses

Troubled Debt Restructurings

The Firm may modify the terms of certain loans for economic or legal reasons related to a borrower's financial difficulties by granting one or more concessions that the Firm would not otherwise consider. Such modifications are accounted for and reported as troubled debt restructurings ("TDR"). A loan that has been modified in a TDR is generally considered to be impaired and is evaluated individually. TDRs are also generally classified as nonaccrual and may be returned to accrual status only after the Firm expects repayment of the remaining contractual principal and interest and there is sustained repayment performance for a reasonable period.

Nonaccrual

The Firm places financial instruments on nonaccrual status if principal or interest is not expected when contractually due or is past due for a period of 90 days or more unless the obligation is well-secured and is in the process of collection.

For any instrument placed on nonaccrual status, the Firm reverses any unpaid interest accrued with an offsetting reduction to Interest income. Principal and interest payments received on nonaccrual instruments are applied to principal if there is doubt regarding the ultimate collectability of principal. If collection of the principal is not in doubt, interest income is realized on a cash basis. If the instrument is brought current and neither principal nor interest collection is in

doubt, instruments can generally return to accrual status, and interest income can be recognized.

ACL Charge-offs

The principal balance of a financial instrument is charged off in the period it is deemed uncollectible, resulting in a reduction in the ACL and in the balance of the financial instrument in the balance sheet. Accrued interest receivable balances that are separately recorded from the related financial instruments are charged off against Interest income when the related financial instrument is placed on nonaccrual status. Accordingly, the Firm elected not to measure an ACL for accrued interest receivables.

Transfers of Financial Assets

Transfers of financial assets are accounted for as sales when the Firm has relinquished control over the transferred assets. Any related gain or loss on sale is recorded in Net revenues. Transfers that are not accounted for as sales are treated as collateralized financings. Securities borrowed or purchased under agreements to resell and securities loaned or sold under agreements to repurchase are treated as collateralized financings (see Note 9).

Securities purchased under agreements to resell ("reverse repurchase agreements") and Securities sold under agreements to repurchase ("repurchase agreements"), including repurchase and reverse repurchase agreements-to-maturity, are carried in the balance sheet at the amount of cash paid or received plus accrued interest except for certain reverse repurchase and repurchase agreements for which the Firm has elected the fair value option (see Note 6). Where appropriate, repurchase agreements and reverse repurchase agreements with the same counterparty are reported on a net basis. Securities borrowed and securities loaned are recorded at the amount of cash collateral advanced or received.

In instances where the Firm is the lender in securities-for-securities transactions and is permitted to sell or repledge these securities, the fair value of the collateral received is reported in Trading assets, and the related obligation to return the collateral is reported in Trading liabilities in the balance sheet. Securities-for-securities transactions where the Firm is the borrower are not included in the balance sheet.

In order to manage credit exposure arising from these transactions, in appropriate circumstances, the Firm enters into master netting agreements and collateral agreements with its counterparties. These agreements provide the Firm with the right, in the event of a default by the counterparty, to net a counterparty's rights and obligations under the agreement and to liquidate and set off collateral held by the Firm against the net amount owed by the counterparty.

The Firm's policy is generally to take possession of securities purchased or borrowed in connection with reverse repurchase agreements and securities borrowed transactions, respectively, and to receive cash and/or securities delivered under repurchase agreements or securities loaned transactions (with rights of rehypothecation).

For information related to offsetting of certain collateralized transactions, see Note 9.

Premises, Equipment and Capitalized Software Costs

Premises, equipment and capitalized software costs consist of buildings, leasehold improvements, furniture, fixtures, computer and communications equipment, power generation assets and capitalized software (externally purchased and developed for internal use). Premises, equipment and capitalized software costs are stated at cost less accumulated depreciation and amortization and are included in Other assets in the balance sheet. Depreciation and amortization are provided by the straight-line method over the estimated useful life of the asset.

Estimated Useful Life of Assets

in years	Estimated Useful Life
Buildings	39
Leasehold improvements—Building	term of lease to 25
Leasehold improvements—Other	term of lease to 15
Furniture and fixtures	7
Computer and communications equipment	3 to 9
Power generation assets	15 to 29
Capitalized software costs	2 to 10

Premises, equipment and capitalized software costs are tested for impairment whenever events or changes in circumstances suggest that an asset's carrying value may not be fully recoverable.

Goodwill and Intangible Assets

The Firm tests goodwill and indefinite-lived intangible assets for impairment on an annual basis and on an interim basis when certain events or circumstances exist. The Firm tests goodwill for impairment at the reporting unit level, which is generally at the level of or one level below the asset's business segment. The Firm tests indefinite-lived intangible assets for impairment at the aggregate level of management contracts. For both the annual and interim tests, the Firm has the option to either (i) perform a quantitative impairment test or (ii) first perform a qualitative assessment to determine whether it is more likely than not that the fair value is less than its carrying amount, in which case the quantitative test would be performed.

When performing a quantitative impairment test, the Firm compares the fair value with the carrying amount. If the fair value is less than the carrying amount, the impairment loss is equal to the excess of the carrying value over the fair value, limited to the carrying amount.

The estimated fair values are derived based on valuation techniques the Firm believes market participants would use. The estimated fair values are generally determined by utilizing a discounted cash flow methodology or

methodologies that incorporate price-to-book and price-to-earnings multiples of certain comparable companies for goodwill impairment testing.

Intangible assets with a finite life are amortized over their estimated useful life and are reviewed for impairment on an interim basis when impairment indicators are present. Impairment losses are recorded within Other expenses in the income statement.

Earnings per Common Share

Basic EPS is computed by dividing earnings available to Morgan Stanley common shareholders by the weighted average number of common shares outstanding for the period. Earnings available to Morgan Stanley common shareholders represents net income applicable to Morgan Stanley reduced by preferred stock dividends. Common shares outstanding include common stock and vested RSUs where recipients have satisfied the relevant vesting terms. Diluted EPS reflects the assumed conversion of all dilutive securities.

Share-based awards that pay dividend equivalents subject to vesting are included in diluted shares outstanding (if dilutive) under the treasury stock method.

The Firm has granted PSUs that vest and convert to shares of common stock only if predetermined performance and market goals are satisfied. Since the issuance of the shares is contingent upon the satisfaction of certain conditions, the PSUs are included in diluted EPS based on the number of shares (if any) that would be issuable if the reporting date was the end of the performance period.

For further information on diluted earnings (loss) per common share, see Note 18 to the financial statements.

Deferred Compensation

Stock-Based Compensation

The Firm measures compensation expense for stock-based awards at fair value. The Firm determines the fair value of RSUs (including PSUs with non-market performance conditions) based on the grant-date fair value of its common stock, measured as the volume-weighted average price on the date of grant ("VWAP"). The fair value of RSUs not entitled to dividends until conversion is measured at VWAP reduced by the present value of dividends expected to be paid on the underlying shares prior to scheduled conversion date. PSUs that contain market-based conditions are valued using a Monte Carlo valuation model.

Compensation expense is recognized over the vesting period relevant to each separately vesting portion of the award. Compensation expense for awards with performance conditions is recognized based on the probable outcome of the performance condition at each reporting date. Compensation expense for awards with market-based conditions is recognized irrespective of the probability of the market condition being achieved and is not reversed if the market condition is not met. The Firm accounts for forfeitures as they occur.

Stock-based awards generally contain clawback and cancellation provisions. Certain awards provide the Firm discretion to claw back or cancel all or a portion of the award under specified circumstances. Compensation expense for those awards is adjusted for changes in the fair value of the Firm's common stock or the relevant model valuation, as appropriate, until conversion, exercise or expiration. The Firm also operates an Employee Stock Purchase Plan ("ESPP") which allows U.S. employees to purchase shares of the Firm at a discount.

Employee Stock Trusts

In connection with certain stock-based compensation plans, the Firm has established employee stock trusts to provide, at its discretion, common stock voting rights to certain RSU holders. Following the grant of an RSU award, when a stock trust is utilized, the Firm contributes shares to be held in the stock trust until the RSUs convert to common shares. The assets of the employee stock trusts are consolidated with those of the Firm and are generally accounted for in a manner similar to treasury stock, where the shares of common stock outstanding reported in Common stock issued to employee stock trusts are offset by an equal amount reported in Employee stock trusts in the balance sheet.

The Firm uses the grant-date fair value of stock-based compensation as the basis for recording the movement of the assets to or from the employee stock trusts. Changes in the fair value are not recognized as the Firm's stock-based compensation must be settled by delivery of a fixed number of shares of the Firm's common stock.

Deferred Cash-Based Compensation

Compensation expense for deferred cash-based compensation awards is calculated based on the notional value of the award granted, adjusted for changes in the fair value of the referenced investments that employees select. Compensation expense is recognized over the vesting period relevant to each separately vesting portion of deferred awards.

The Firm invests directly, as a principal, in financial instruments and other investments to economically hedge certain of its obligations under its deferred cash-based compensation plans. Changes in the value of such investments are recorded in Trading revenues and Investments revenues. Although changes in compensation expense resulting from changes in the fair value of the referenced investments will generally be offset by changes in the fair value of investments made by the Firm, there is typically a timing difference between the immediate recognition of gains and losses on the Firm's investments and the deferred recognition of the related compensation expense over the vesting period.

Retirement-Eligible Employee Compensation

For year-end stock-based awards and deferred cash-based compensation awards anticipated to be granted to retirement-eligible employees under award terms that do not contain a future service requirement, the Firm accrues the estimated cost of the awards over the course of the calendar year preceding the grant date, which reflects the period over which the compensation is earned.

Carried Interest Compensation

The Firm generally recognizes compensation expense for any portion of carried interest (both realized and unrealized) that is allocated to employees. For information on performance-based fees in the form of carried interest, which are directly related to carried interest compensation, see "Revenue Recognition—Carried Interest" herein.

Income Taxes

Deferred tax assets and liabilities are recorded based upon the temporary differences between the financial statement and income tax bases of assets and liabilities using currently enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income tax expense (benefit) in the period that includes the enactment date. Such effects are recorded in Provision for income taxes regardless of where deferred taxes were originally recorded.

The Firm recognizes net deferred tax assets to the extent that it believes these assets are more likely than not to be realized. In making such a determination, the Firm considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax planning strategies and results of recent operations. When performing the assessment, the Firm considers all types of deferred tax assets in combination with each other, regardless of the origin of the underlying temporary difference. If a deferred tax asset is determined to be unrealizable, a valuation allowance is established. If the Firm subsequently determines that it would be able to realize deferred tax assets in excess of their net recorded amount, it would make an adjustment to the deferred tax asset valuation allowance, which would reduce the provision for income taxes.

The Firm recognizes tax expense associated with Global Intangible Low-Taxed Income as it is incurred as part of the current income taxes to be paid or refunded for the current period.

Uncertain tax positions are recorded on the basis of a two-step process, whereby (i) the Firm determines whether it is more likely than not that the tax positions will be sustained on the basis of the technical merits of the position and (ii) for those tax positions that meet this threshold, the Firm recognizes the largest amount of tax benefit that is more likely than not to be realized upon ultimate settlement with the related tax authority. Interest and penalties related to unrecognized tax benefits are recognized as a component of the provision for income taxes.

Foreign Currencies

Assets and liabilities of operations with non-U.S. dollar functional currencies are translated at year-end rates of exchange. Gains or losses resulting from translating foreign currency financial statements, net of hedge gains or losses and related tax effects, are reflected in AOCI in the balance sheet. Gains or losses resulting from remeasurement of foreign currency transactions are included in net income, and amounts recognized in the income statement are translated at the rate of exchange on the respective date of recognition for each amount.

Accounting Update Adopted in 2022

Reference Rate Reform

The Firm has adopted the Reference Rate Reform accounting update, which extends the period of time entities can utilize the reference rate reform relief guidance from December 31, 2022 to December 31, 2024. The relief provides optional expedients and exceptions for applying generally accepted accounting principles to contracts, hedging relationships and other transactions that reference LIBOR or other interest rate benchmarks for which the referenced rate is expected to be discontinued or replaced. The Firm is applying the accounting relief as relevant contract and hedge accounting relationship modifications are made during the course of the reference rate reform transition period. There was no impact to the Firm's financial statements upon issuance of this accounting standard update.

Accounting Updates Adopted in 2020

Financial Instruments—Credit Losses

The Firm has adopted the Financial Instruments—Credit Losses accounting update.

This accounting update impacted the impairment model for certain financial assets measured at amortized cost by requiring a CECL methodology to estimate expected credit losses over the entire life of the financial asset, recorded at inception or purchase. CECL replaced the incurred loss model previously applicable to loans held for investment, HTM securities and other receivables carried at amortized cost, such as employee loans.

The update also eliminated the concept of other-than-temporary impairment for AFS securities and instead requires impairments on AFS securities to be recognized in earnings through an allowance when the fair value is less than amortized cost and a credit loss exists, and through a permanent reduction of the amortized cost basis when the securities are expected to be sold before recovery of amortized cost.

At transition on January 1, 2020, the adoption of this accounting standard resulted in an increase in the allowance for credit losses of $131 million with a corresponding reduction in Retained earnings of $100 million, net of tax. The adoption impact was primarily attributable to a $124 million increase in the allowance for credit losses on employee loans.

3. Acquisitions

Acquisition of Eaton Vance

On March 1, 2021, the Firm completed the acquisition of 100% of Eaton Vance in a stock and cash transaction, which increased the scale and breadth of the Investment Management business segment. Total consideration for the transaction was approximately $8.7 billion, which consisted of the $5.3 billion fair value of 69 million common shares issued from Common stock held in treasury and cash of approximately $3.4 billion.

Upon acquisition, the assets and liabilities of Eaton Vance were adjusted to their respective fair values as of the closing date of the transaction, including the identifiable intangible assets acquired. In addition, the excess of the purchase price over the fair value of the net assets acquired was recorded as goodwill. The fair value estimates used in valuing certain acquired assets and liabilities are based, in part, on inputs that are unobservable. For intangible assets, these included, but are not limited to, forecasted future cash flows, revenue growth rates, attrition rates and discount rates.

Eaton Vance Purchase Price Allocation

$ in millions	At March 1, 2021
Assets	
Cash and cash equivalents	$ 691
Trading assets at fair value:	
Loans and lending commitments	445
Investments	299
Corporate and other debt	52
Customer and other receivables	331
Goodwill	5,270
Intangible assets	3,956
Other assets	836
Total assets	**$ 11,880**
Liabilities	
Other secured financings	$ 399
Other liabilities and accrued expenses	2,147
Borrowings	678
Total liabilities	**$ 3,224**

Acquired Intangible Assets

$ in millions	Weighted Average Life (Years)	At March 1, 2021
Non-amortizable		
Management contracts	Indefinite	$ 2,120
Amortizable		
Customer relationships	16	1,455
Tradenames	23	221
Management contracts	16	160
Total acquired intangible assets		**$ 3,956**

Eaton Vance Net revenues of approximately $1,818 million and Net income of approximately $413 million were included in the Firm's consolidated results for the period from March 1, 2021 to December 31, 2021.

Morgan Stanley and Eaton Vance Proforma Combined Financial Information (Unaudited)

$ in millions	2021	2020
Net revenues	$ 60,051	$ 50,371
Net income	15,220	10,779

The proforma financial information presented in the previous table was computed by combining the historical financial information of the Firm and Eaton Vance along with the effects of the acquisition method of accounting for business combinations as though the companies were combined on January 1, 2020.

The proforma information does not reflect the potential benefits of cost and funding synergies, opportunities to earn additional revenues or other factors, and, therefore, does not represent what the actual Net revenues and Net income would have been had the companies actually been combined as of this date.

Acquisition of E*TRADE

On October 2, 2020, the Firm completed the acquisition of 100% of E*TRADE in a stock-for-stock transaction, which increased the scale and breadth of the Wealth Management business segment. Total consideration for the transaction was approximately $11.9 billion, which principally consisted of the $11 billion fair value of 233 million common shares issued from Common stock held in treasury, at an exchange ratio of 1.0432 per E*TRADE common share. In addition, the Firm issued Series M and Series N preferred shares with a fair value of approximately $0.7 billion in exchange for E*TRADE's existing preferred stock.

Upon acquisition, the assets and liabilities of E*TRADE were adjusted to their respective fair values as of the closing date of the transaction, including the identifiable intangible assets acquired. In addition, the excess of the purchase price over the fair value of the net assets acquired was recorded as goodwill. The fair value estimates used in valuing certain acquired assets and liabilities are based, in part, on inputs that are unobservable. For intangible assets, these include, but are not

limited to, forecasted future cash flows, revenue growth rates, customer attrition rates and discount rates.

E*TRADE Purchase Price Allocation

$ in millions		At October 2, 2020
Assets		
Cash and cash equivalents	$	3,807
Trading assets at fair value:		
Loans and lending commitments		1,124
Investments		44
Investment securities		48,855
Securities borrowed		975
Customer and other receivables		12,267
Loans:		
Held for investment		462
Goodwill		4,270
Intangible assets[1]		3,282
Other assets		1,351
Total assets	$	76,437
Liabilities		
Deposits	$	44,890
Securities loaned		766
Customer and other payables		15,488
Other liabilities and accrued expenses		1,688
Borrowings		1,665
Total liabilities	$	64,497

1. Acquired intangible assets are primarily composed of $2.8 billion related to customer relationships with a weighted-average life of 17 years.

E*TRADE's results were included in the Firm's consolidated results for the period from October 2, 2020 to December 31, 2020. For this period, Net revenues were approximately $600 million, and Net income (loss) was not material.

Morgan Stanley and E*TRADE Proforma Combined Financial Information (Unaudited)

$ in millions		2020		2019
Net revenues	$	50,203	$	44,192
Net income		11,459		9,839

The proforma financial information presented in the previous table was computed by combining the historical financial information of the Firm and E*TRADE along with the effects of the acquisition method of accounting for business combinations as though the companies were combined on January 1, 2019.

The proforma information does not reflect the potential benefits of cost and funding synergies, opportunities to earn additional revenues or other factors, and, therefore, does not represent what the actual Net revenues and Net income would have been had the companies actually been combined as of this date.

4. Cash and Cash Equivalents

$ in millions		At December 31, 2022		At December 31, 2021
Cash and due from banks	$	**5,409**	$	8,394
Interest bearing deposits with banks		**122,718**		119,331
Total Cash and cash equivalents	$	**128,127**	$	127,725
Restricted cash	$	**35,380**	$	40,887

For additional information on cash and cash equivalents, including restricted cash, see Note 2.

5. Fair Values

Recurring Fair Value Measurements

Assets and Liabilities Measured at Fair Value on a Recurring Basis

	At December 31, 2022				
$ in millions	Level 1	Level 2	Level 3	Netting[1]	Total
Assets at fair value					
Trading assets:					
U.S. Treasury and agency securities	**$ 38,462**	**$ 42,263**	**$ 17**	**$ —**	**$ 80,742**
Other sovereign government obligations	**24,644**	**4,769**	**169**	**—**	**29,582**
State and municipal securities	**—**	**1,503**	**145**	**—**	**1,648**
MABS	**—**	**1,774**	**416**	**—**	**2,190**
Loans and lending commitments[2]	**—**	**6,380**	**2,017**	**—**	**8,397**
Corporate and other debt	**—**	**23,351**	**2,096**	**—**	**25,447**
Corporate equities[3]	**97,869**	**1,019**	**116**	**—**	**99,004**
Derivative and other contracts:					
Interest rate	**4,481**	**166,392**	**517**	**—**	**171,390**
Credit	**—**	**7,876**	**425**	**—**	**8,301**
Foreign exchange	**49**	**115,766**	**183**	**—**	**115,998**
Equity	**2,778**	**40,171**	**406**	**—**	**43,355**
Commodity and other	**5,609**	**21,152**	**3,701**	**—**	**30,462**
Netting[1]	**(9,618)**	**(258,821)**	**(1,078)**	**(55,777)**	**(325,294)**
Total derivative and other contracts	**3,299**	**92,536**	**4,154**	**(55,777)**	**44,212**
Investments[4]	**652**	**685**	**923**	**—**	**2,260**
Physical commodities	**—**	**2,379**	**—**	**—**	**2,379**
Total trading assets[4]	**164,926**	**176,659**	**10,053**	**(55,777)**	**295,861**
Investment securities — AFS	**53,866**	**30,396**	**35**	**—**	**84,297**
Securities purchased under agreements to resell	**—**	**8**	**—**	**—**	**8**
Total assets at fair value	**$218,792**	**$207,063**	**$10,088**	**$(55,777)**	**$380,166**

$ in millions	At December 31, 2022 Level 1	Level 2	Level 3	Netting[1]	Total
Liabilities at fair value					
Deposits	**$ —**	**$ 4,776**	**$ 20**	**$ —**	**$ 4,796**
Trading liabilities:					
U.S. Treasury and agency securities	**20,776**	**228**	**—**	**—**	**21,004**
Other sovereign government obligations	**23,235**	**2,688**	**3**	**—**	**25,926**
Corporate and other debt	**—**	**8,786**	**29**	**—**	**8,815**
Corporate equities[3]	**59,998**	**518**	**42**	**—**	**60,558**
Derivative and other contracts:					
Interest rate	**3,446**	**161,044**	**668**	**—**	**165,158**
Credit	**—**	**7,987**	**315**	**—**	**8,302**
Foreign exchange	**89**	**113,383**	**117**	**—**	**113,589**
Equity	**3,266**	**46,923**	**1,142**	**—**	**51,331**
Commodity and other	**6,187**	**17,574**	**2,618**	**—**	**26,379**
Netting[1]	**(9,618)**	**(258,821)**	**(1,078)**	**(57,107)**	**(326,624)**
Total derivative and other contracts	**3,370**	**88,090**	**3,782**	**(57,107)**	**38,135**
Total trading liabilities	**107,379**	**100,310**	**3,856**	**(57,107)**	**154,438**
Securities sold under agreements to repurchase	**—**	**352**	**512**	**—**	**864**
Other secured financings	**—**	**4,459**	**91**	**—**	**4,550**
Borrowings	**—**	**77,133**	**1,587**	**—**	**78,720**
Total liabilities at fair value	**$107,379**	**$187,030**	**$ 6,066**	**$(57,107)**	**$243,368**

$ in millions	At December 31, 2021 Level 1	Level 2	Level 3	Netting[1]	Total
Assets at fair value					
Trading assets:					
U.S. Treasury and agency securities	$ 45,970	$ 29,749	$ 2	$ —	$ 75,721
Other sovereign government obligations	28,041	4,533	211	—	32,785
State and municipal securities	—	1,905	13	—	1,918
MABS	—	1,237	344	—	1,581
Loans and lending commitments[2]	—	8,821	3,806	—	12,627
Corporate and other debt	—	27,309	1,973	—	29,282
Corporate equities[3]	91,630	832	115	—	92,577
Derivative and other contracts:					
Interest rate	1,364	153,048	1,153	—	155,565
Credit	—	8,441	509	—	8,950
Foreign exchange	28	74,571	132	—	74,731
Equity	1,562	68,519	251	—	70,332
Commodity and other	4,462	20,194	3,057	—	27,713
Netting[1]	(5,696)	(241,814)	(794)	(50,833)	(299,137)
Total derivative and other contracts	1,720	82,959	4,308	(50,833)	38,154
Investments[4]	735	846	1,125	—	2,706
Physical commodities	—	2,771	—	—	2,771
Total trading assets[4]	168,096	160,962	11,897	(50,833)	290,122
Investment securities — AFS	59,021	43,809	—	—	102,830
Securities purchased under agreements to resell	—	7	—	—	7
Total assets at fair value	$227,117	$204,778	$11,897	$(50,833)	$392,959

$ in millions	At December 31, 2021 Level 1	Level 2	Level 3	Netting[1]	Total
Liabilities at fair value					
Deposits	$ —	$ 1,873	$ 67	$ —	$ 1,940
Trading liabilities:					
U.S. Treasury and agency securities	16,433	319	—	—	16,752
Other sovereign government obligations	20,771	2,062	—	—	22,833
Corporate and other debt	—	8,707	16	—	8,723
Corporate equities[3]	75,181	226	45	—	75,452
Derivative and other contracts:					
Interest rate	1,087	145,670	445	—	147,202
Credit	—	9,090	411	—	9,501
Foreign exchange	19	73,096	80	—	73,195
Equity	2,119	77,363	1,196	—	80,678
Commodity and other	4,563	16,837	1,528	—	22,928
Netting[1]	(5,696)	(241,814)	(794)	(50,632)	(298,936)
Total derivative and other contracts	2,092	80,242	2,866	(50,632)	34,568
Total trading liabilities	114,477	91,556	2,927	(50,632)	158,328
Securities sold under agreements to repurchase	—	140	651	—	791
Other secured financings	—	4,730	403	—	5,133
Borrowings	—	74,183	2,157	—	76,340
Total liabilities at fair value	$114,477	$172,482	$ 6,205	$(50,632)	$242,532

MABS—Mortgage- and asset-backed securities

1. For positions with the same counterparty that cross over the levels of the fair value hierarchy, both counterparty netting and cash collateral netting are included in the column titled "Netting." Positions classified within the same level that are with the same counterparty are netted within that level. For further information on derivative instruments and hedging activities, see Note 7.
2. For a further breakdown by type, see the following Detail of Loans and Lending Commitments at Fair Value table.
3. For trading purposes, the Firm holds or sells short equity securities issued by entities in diverse industries and of varying sizes.
4. Amounts exclude certain investments that are measured based on NAV per share, which are not classified in the fair value hierarchy. For additional disclosure about such investments, see "Net Asset Value Measurements" herein.

Detail of Loans and Lending Commitments at Fair Value

$ in millions	**At December 31, 2022**	At December 31, 2021
Corporate	**$ —**	$ 8
Secured lending facilities	**6**	—
Commercial real estate	**528**	863
Residential real estate	**2,020**	3,911
Securities-based lending and Other loans	**5,843**	7,845
Total	**$ 8,397**	$ 12,627

Unsettled Fair Value of Futures Contracts[1]

$ in millions	**At December 31, 2022**	At December 31, 2021
Customer and other receivables, net	**$ 1,219**	$ 948

1. These contracts are primarily Level 1, actively traded, valued based on quoted prices from the exchange and are excluded from the previous recurring fair value tables.

Valuation Techniques for Assets and Liabilities Measured at Fair Value on a Recurring Basis

U.S. Treasury and Agency Securities

U.S. Treasury Securities

Valuation Technique:
- Fair value is determined using quoted market prices.

Valuation Hierarchy Classification:
- Level 1—as inputs are observable and in an active market

U.S. Agency Securities

Valuation Techniques:
- Non-callable agency-issued debt securities are generally valued using quoted market prices, and callable agency-issued debt securities are valued by benchmarking model-derived prices to quoted market prices and trade data for comparable instruments.
- The fair value of agency mortgage pass-through pool securities is model-driven based on spreads of comparable to-be-announced securities.
- CMOs are generally valued using quoted market prices and trade data adjusted by subsequent changes in related indices for comparable instruments.

Valuation Hierarchy Classification:
- Level 1—on-the-run agency issued debt securities if actively traded and inputs are observable
- Level 2—all other agency issued debt securities, agency mortgage pass-through pool securities and CMOs if actively traded and inputs are observable
- Level 3—in instances where the trading activity is limited or inputs are unobservable

Other Sovereign Government Obligations

Valuation Techniques:
- Fair value is determined using quoted prices in active markets when available. When not available, quoted prices in less active markets are used. In the absence of position-specific quoted prices, fair value may be determined through benchmarking from comparable instruments.

Valuation Hierarchy Classification:
- Level 1—if actively traded and inputs are observable
- Level 2—if the market is less active or prices are dispersed
- Level 3—in instances where the prices are unobservable

State and Municipal Securities

Valuation Techniques:
- Fair value is determined using recently executed transactions, market price quotations or pricing models that factor in, where applicable, interest rates, bond or CDS spreads, adjusted for any basis difference between cash and derivative instruments.

Valuation Hierarchy Classification:
- Level 2—if value based on observable market data supported by market liquidity for comparable instruments
- Level 3—in instances where market data are not observable or supported by market liquidity

MABS

Valuation Techniques:
- Mortgage- and asset-backed securities may be valued based on price or spread data obtained from observed transactions or independent external parties such as vendors or brokers.
- When position-specific external price data are not observable, the fair value determination may require benchmarking to comparable instruments, and/or analyzing expected credit losses, default and recovery rates, and/or applying discounted cash flow techniques. When evaluating the comparable instruments for use in the valuation of each security, security collateral-specific attributes, including payment priority, credit enhancement levels, type of collateral, delinquency rates and loss severity, are considered. In addition, for RMBS borrowers, FICO scores and the level of documentation for the loan are considered.
- Market standard cash flow models may be utilized to model the specific collateral composition and cash flow structure of each transaction. Key inputs to these models are market spreads, forecasted credit losses, and default and prepayment rates for each asset category.
- Valuation levels of RMBS and CMBS indices are used as an additional data point for benchmarking purposes or to price outright index positions.

Valuation Hierarchy Classification:
- Level 2—if value based on observable market data supported by market liquidity for comparable instruments
- Level 3—if external prices or significant spread inputs are unobservable or not supported by market liquidity or if the comparability assessment involves significant subjectivity related to property type differences, cash flows, performance or other inputs

Loans and Lending Commitments

Valuation Techniques:
- Fair value of corporate loans is determined using recently executed transactions, market price quotations (where observable), implied yields from comparable debt, market observable CDS spread levels obtained from independent external parties adjusted for any basis difference between cash and derivative instruments, along with proprietary valuation models and default recovery analysis where such transactions and quotations are unobservable.
- Fair value of contingent corporate lending commitments is determined by using executed transactions on comparable loans and the anticipated market price based on pricing indications from syndicate banks and customers. The valuation of loans and lending commitments also takes into account fee income that is considered an attribute of the contract.
- Fair value of mortgage loans is determined using observable prices based on transactional data or third-party pricing for comparable instruments, when available.
- Where position-specific external prices are not observable, fair value is estimated based on benchmarking to prices and rates observed in the primary market for similar loan

or borrower types or based on the present value of expected future cash flows using the Firm's best available estimates of the key assumptions, including forecasted credit losses, prepayment rates, forward yield curves and discount rates commensurate with the risks involved or a methodology that utilizes the capital structure and credit spreads of recent comparable securitization transactions.
- Fair value of equity margin loans is determined by discounting future interest cash flows, net of potential losses resulting from large downward price movements of the underlying margin loan collateral. The potential losses are modeled using the margin loan rate, which is calibrated from market observable CDS spreads, implied debt yields or volatility metrics of the loan collateral.

Valuation Hierarchy Classification:
- Level 2—if value based on observable market data supported by market liquidity for comparable instruments
- Level 3—in instances where prices or significant spread inputs are unobservable or not supported by market liquidity or if the comparability assessment involves significant subjectivity

Corporate and Other Debt

Corporate Bonds

Valuation Techniques:
- Fair value is determined using recently executed transactions, market price quotations, bond spreads and CDS spreads obtained from independent external parties, such as vendors and brokers, adjusted for any basis difference between cash and derivative instruments.
- The spread data used are for the same maturity as the bond. If the spread data do not reference the issuer, then data that reference comparable issuers are used. When position-specific external price data are not observable, fair value is determined based on either benchmarking to comparable instruments or cash flow models with yield curves, bond or single-name CDS spreads and recovery rates or loss given default as significant inputs.

Valuation Hierarchy Classification:
- Level 2—if value based on observable market data for comparable instruments
- Level 3—in instances where prices or significant spread inputs are unobservable or if the comparability assessment involves significant subjectivity

CDOs

Valuation Techniques:
- The Firm holds cash CDOs that typically reference a tranche of an underlying synthetic portfolio of single-name CDS spreads collateralized by corporate bonds (CLN) or cash portfolio of ABS/loans ("asset-backed CDOs").
- Credit correlation, a primary input used to determine the fair value of CLNs, is usually unobservable and derived using a benchmarking technique. Other model inputs such as credit spreads, including collateral spreads and interest rates, are typically observable.
- Asset-backed CDOs are valued based on an evaluation of the market and model input parameters sourced from comparable instruments as indicated by market activity. Each asset-backed CDO position is evaluated independently taking into consideration available comparable market levels, underlying collateral performance and pricing, deal structures and liquidity.

Valuation Hierarchy Classification:
- Level 2—when either comparable market transactions are observable or credit correlation input is insignificant
- Level 3—when either comparable market transactions are unobservable or the credit correlation input is significant

Equity Contracts with Financing Features

Valuation Techniques:
- Fair value of certain equity contracts, which are not classified as OTC derivatives because they do not meet the net investment criteria, is determined by discounting future interest cash flows, inclusive of the estimated value of the embedded optionality. The valuation uses the same derivative pricing models and valuation techniques as described under "OTC Derivative Contracts" herein.

Valuation Hierarchy Classification:
- Level 2—when the contract is valued using observable inputs or where the unobservable input is not deemed significant
- Level 3—when the contract is valued using an unobservable input that is deemed significant

Corporate Equities

Valuation Techniques:
- Exchange-traded equity securities are generally valued based on quoted prices from the exchange.
- Unlisted equity securities are generally valued based on an assessment of each security, considering rounds of financing and third-party transactions, discounted cash flow analyses and market-based information, including comparable transactions, trading multiples and changes in market outlook, among other factors.
- Listed fund units are generally marked to the exchange-traded price if actively traded, or to NAV if not. Unlisted fund units are generally marked to NAV.

Valuation Hierarchy Classification:
- Level 1—actively traded exchange-traded securities and fund units
- Level 2—if not actively traded, inputs are observable or if undergoing a recent M&A event or corporate action
- Level 3—if not actively traded, inputs are unobservable or if undergoing an aged M&A event or corporate action

Derivative and Other Contracts

Exchange-Traded Derivative Contracts

Valuation Techniques:
- Exchange-traded derivatives that are actively traded are valued based on quoted prices from the exchange.
- Exchange-traded derivatives that are not actively traded are valued using the same techniques as those applied to OTC derivatives as noted below.

Valuation Hierarchy Classification:
- Level 1—when actively traded
- Level 2—when not actively traded

OTC Derivative Contracts

Valuation Techniques:

- OTC derivative contracts include forward, swap and option contracts related to interest rates, foreign currencies, credit standing of reference entities, equity prices or commodity prices.
- Depending on the product and the terms of the transaction, the fair value of OTC derivative products can be modeled using a series of techniques, including closed-form analytic formulas, such as the Black-Scholes option-pricing model, simulation models or a combination thereof. Many pricing models do not entail material subjectivity as the methodologies employed do not necessitate significant judgment since model inputs may be observed from actively quoted markets, as is the case for generic interest rate swaps, many equity, commodity and foreign currency option contracts, and certain CDS. In the case of more established derivative products, the pricing models used by the Firm are widely accepted by the financial services industry.
- More complex OTC derivative products are typically less liquid and require more judgment in the implementation of the valuation technique since direct trading activity or quotes are unobservable. This includes certain types of interest rate derivatives with both volatility and correlation exposure, equity, commodity or foreign currency derivatives that are either longer-dated or include exposure to multiple underlyings, and credit derivatives, including CDS on certain mortgage- or asset-backed securities and basket CDS. Where required inputs are unobservable, relationships to observable data points, based on historical and/or implied observations, may be employed as a technique to estimate the model input values. For further information on the valuation techniques for OTC derivative products, see Note 2.

Valuation Hierarchy Classification:

- Level 2—when valued using observable inputs supported by market liquidity or where the unobservable input is not deemed significant
- Level 3—when valued using observable inputs with limited market liquidity or if an unobservable input is deemed significant

Investments

Valuation Techniques:

- Investments include direct investments in equity securities, as well as various investment management funds, which include investments made in connection with certain employee deferred compensation plans.
- Exchange-traded direct equity investments are generally valued based on quoted prices from the exchange.
- For direct investments, initially, the transaction price is generally considered by the Firm as the exit price and is its best estimate of fair value.
- After initial recognition, in determining the fair value of non-exchange-traded internally and externally managed funds, the Firm generally considers the NAV of the fund provided by the fund manager to be the best estimate of fair value. These investments are included in the Fund Interests table in the "Net Asset Value Measurements" section herein.
- For non-exchange-traded investments either held directly or held within internally managed funds, fair value after initial recognition is based on an assessment of each underlying investment, considering rounds of financing and third-party transactions, discounted cash flow analyses and market-based information, including comparable Firm transactions, trading multiples and changes in market outlook, among other factors.

Valuation Hierarchy Classification:

- Level 1—if actively traded
- Level 2—when not actively traded and valued based on rounds of financing or third-party transactions
- Level 3—when not actively traded and rounds of financing or third-party transactions are not available

Physical Commodities

Valuation Techniques:.

- Fair value is determined using observable inputs, including broker quotations and published indices.

Valuation Hierarchy Classification:

- Level 2—valued using observable inputs

Investment Securities—AFS Securities

Valuation Techniques:

- AFS securities are composed of U.S. government and agency securities (*e.g.*, U.S. Treasury securities, agency-issued debt, agency mortgage pass-through securities and CMOs), CMBS, ABS, state and municipal securities. For further information on the determination of fair value, refer to the corresponding asset/liability Valuation Technique described herein for the same instruments.

Valuation Hierarchy Classification:

- For further information on the determination of valuation hierarchy classification, see the corresponding Valuation Hierarchy Classification described herein.

Deposits

Valuation Techniques:

- The Firm issues FDIC-insured certificates of deposit that pay either fixed coupons or that have repayment terms linked to the performance of debt or equity securities, indices or currencies. The fair value of these certificates of deposit is determined using valuation models that incorporate observable inputs referencing identical or comparable securities, including prices to which the deposits are linked, interest rate yield curves, option volatility and currency rates, equity prices, and the impact of the Firm's own credit spreads, adjusted for the impact of the FDIC insurance, which is based on vanilla deposit issuance rates.

Valuation Hierarchy Classification:

- Level 2—when valuation inputs are observable
- Level 3—in instances where an unobservable input is deemed significant

Securities Purchased under Agreements to Resell and Securities Sold under Agreements to Repurchase

Valuation Techniques:

- Fair value is computed using a standard cash flow discounting methodology.
- The inputs to the valuation include contractual cash flows and collateral funding spreads, which are the incremental spread over the OIS rate for a specific collateral rate (which refers to the rate applicable to a specific type of security pledged as collateral).

Valuation Hierarchy Classification:

- Level 2—when the valuation inputs are observable and supported by market liquidity
- Level 3—in instances where the valuation input is observable but not supported by market liquidity or if an unobservable input is deemed significant

Other Secured Financings

Valuation Techniques:

- Other secured financings are composed of short-dated notes secured by Corporate equities, agreements to repurchase Physical commodities, the liabilities related to sales of Loans and lending commitments accounted for as financings, and secured contracts that are not classified as OTC derivatives because they fail net investment criteria. For further information on the determination of fair value, refer to the Valuation Techniques described herein for the corresponding instruments, which are the collateral referenced by the other secured financing liability.

Valuation Hierarchy Classification:

- For further information on the determination of valuation hierarchy classification, see the Valuation Hierarchy Classification described herein for the corresponding instruments, which are the collateral referenced by the other secured financing liability.

Borrowings

Valuation Techniques:

- The Firm carries certain borrowings at fair value that are primarily composed of: instruments whose payments and redemption values are linked to the performance of a specific index, a basket of stocks, a specific equity security, a commodity, a credit exposure or basket of credit exposures; and instruments with various interest rate-related features, including step-ups, step-downs and zero coupons. Also included are unsecured contracts which are not classified as OTC derivatives because they fail net investment criteria.
- Fair value is determined using valuation models for the derivative and debt portions of the instruments. These models incorporate observable inputs referencing identical or comparable securities, including prices to which the instruments are linked, interest rate yield curves, option volatility and currency rates, and commodity or equity prices.
- Independent, external and traded prices are considered, as well as the impact of the Firm's own credit spreads, which are based on observed secondary bond market spreads.

Valuation Hierarchy Classification:

- Level 2—when valued using observable inputs or where the unobservable input is not deemed significant
- Level 3—in instances where an unobservable input is deemed significant

Rollforward of Level 3 Assets and Liabilities Measured at Fair Value on a Recurring Basis

$ in millions	**2022**	2021	2020
U.S. Treasury and agency securities			
Beginning balance	$ 2	$ 9	$ 22
Realized and unrealized gains (losses)	**(3)**	—	1
Purchases	**14**	2	—
Sales	**(1)**	(9)	(22)
Net transfers	**5**	—	8
Ending balance	**$ 17**	$ 2	$ 9
Unrealized gains (losses)	**$ (1)**	$ —	$ —
Other sovereign government obligations			
Beginning balance	$ 211	$ 268	$ 5
Realized and unrealized gains (losses)	**(5)**	(1)	—
Purchases	**116**	146	265
Sales	**(107)**	(192)	(2)
Net transfers	**(46)**	(10)	—
Ending balance	**$ 169**	$ 211	$ 268
Unrealized gains (losses)	**$ (14)**	$ —	$ —
State and municipal securities			
Beginning balance	$ 13	$ —	$ 1
Realized and unrealized gains (losses)	**(4)**	—	—
Purchases	**91**	4	—
Sales	**(82)**	(4)	—
Net transfers	**127**	13	(1)
Ending balance	**$ 145**	$ 13	$ —
Unrealized gains (losses)	**$ —**	$ —	$ —
MABS			
Beginning balance	$ 344	$ 322	$ 438
Realized and unrealized gains (losses)	**(342)**	51	(66)
Purchases	**511**	254	175
Sales	**(130)**	(215)	(244)
Net transfers	**33**	(68)	19
Ending balance	**$ 416**	$ 344	$ 322
Unrealized gains (losses)	**$ 2**	$ (10)	$ (49)
Loans and lending commitments			
Beginning balance	$ 3,806	$ 5,759	$ 5,073
Realized and unrealized gains (losses)	**(80)**	51	(65)
Purchases and originations	**793**	2,446	3,479
Sales	**(740)**	(2,609)	(957)
Settlements	**(1,526)**	(1,268)	(2,196)
Net transfers[1]	**(236)**	(573)	425
Ending balance	**$ 2,017**	$ 3,806	$ 5,759
Unrealized gains (losses)	**$ 29**	$ (7)	$ 58
Corporate and other debt			
Beginning balance	$ 1,973	$ 3,435	$ 1,396
Realized and unrealized gains (losses)	**456**	(140)	318
Purchases and originations	**1,165**	1,355	2,623
Sales	**(1,889)**	(785)	(617)
Settlements	**(27)**	—	(311)
Net transfers[2]	**418**	(1,892)	26
Ending balance	**$ 2,096**	$ 1,973	$ 3,435
Unrealized gains (losses)	**$ 160**	$ (25)	$ 311

$ in millions	2022	2021	2020
Corporate equities			
Beginning balance	$ 115	$ 86	$ 97
Realized and unrealized gains (losses)	(97)	(8)	(55)
Purchases	73	121	36
Sales	(22)	(50)	(17)
Net transfers	47	(34)	25
Ending balance	$ 116	$ 115	$ 86
Unrealized gains (losses)	$ 11	$ (3)	$ (39)
Investments			
Beginning balance	$ 1,125	$ 828	$ 858
Realized and unrealized gains (losses)	(409)	382	32
Purchases	63	226	61
Sales	(107)	(115)	(106)
Net transfers	251	(196)	(17)
Ending balance	$ 923	$ 1,125	$ 828
Unrealized gains (losses)	$ (397)	$ 359	$ (45)
Investment securities—AFS			
Beginning balance	$ —	$ 2,804	$ —
Realized and unrealized gains (losses)	(3)	(4)	5
Purchases[3]	—	—	2,799
Sales	—	(203)	—
Net transfers[3]	38	(2,597)	—
Ending balance	$ 35	$ —	$ 2,804
Unrealized gains (losses)	$ (3)	$ —	$ 5
Securities purchased under agreements to resell			
Beginning balance	$ —	$ 3	$ —
Net transfers	—	(3)	3
Ending balance	$ —	$ —	$ 3
Net derivatives: Interest rate			
Beginning balance	$ 708	$ 682	$ 777
Realized and unrealized gains (losses)	(643)	284	(150)
Purchases	1	67	174
Issuances	—	(52)	(44)
Settlements	(92)	14	40
Net transfers	(125)	(287)	(115)
Ending balance	$ (151)	$ 708	$ 682
Unrealized gains (losses)	$ (327)	$ 292	$ (34)
Net derivatives: Credit			
Beginning balance	$ 98	$ 49	$ 124
Realized and unrealized gains (losses)	84	95	(91)
Purchases	5	18	98
Issuances	(10)	(46)	(112)
Settlements	(61)	58	94
Net transfers	(6)	(76)	(64)
Ending balance	$ 110	$ 98	$ 49
Unrealized gains (losses)	$ 70	$ 122	$ (111)

$ in millions	2022	2021	2020
Net derivatives: Foreign exchange			
Beginning balance	$ 52	$ 61	$ (31)
Realized and unrealized gains (losses)	(8)	(89)	156
Purchases	1	2	4
Issuances	—	(15)	—
Settlements	(46)	16	(17)
Net transfers	67	77	(51)
Ending balance	$ 66	$ 52	$ 61
Unrealized gains (losses)	$ 43	$ (62)	$ 94
Net derivatives: Equity			
Beginning balance	$ (945)	$ (2,231)	$ (1,684)
Realized and unrealized gains (losses)	201	344	72
Purchases	77	70	179
Issuances	(339)	(443)	(713)
Settlements	348	160	(354)
Net transfers[2]	(78)	1,155	269
Ending balance	$ (736)	$ (945)	$ (2,231)
Unrealized gains (losses)	$ 328	$ (103)	$ (210)
Net derivatives: Commodity and other			
Beginning balance	$ 1,529	$ 1,709	$ 1,612
Realized and unrealized gains (losses)	315	529	251
Purchases	185	44	89
Issuances	(210)	(86)	(57)
Settlements	(510)	(599)	(183)
Net transfers	(226)	(68)	(3)
Ending balance	$ 1,083	$ 1,529	$ 1,709
Unrealized gains (losses)	$ (935)	$ 141	$ (309)
Deposits			
Beginning balance	$ 67	$ 126	$ 179
Realized and unrealized losses (gains)	—	—	15
Issuances	11	—	21
Settlements	(3)	(10)	(17)
Net transfers	(55)	(49)	(72)
Ending balance	$ 20	$ 67	$ 126
Unrealized losses (gains)	$ —	$ —	$ 15
Nonderivative trading liabilities			
Beginning balance	$ 61	$ 79	$ 37
Realized and unrealized losses (gains)	(86)	(21)	(18)
Purchases	(35)	(30)	(35)
Sales	93	43	27
Settlements	—	—	3
Net transfers	41	(10)	65
Ending balance	$ 74	$ 61	$ 79
Unrealized losses (gains)	$ 17	$ (21)	$ (18)
Securities sold under agreements to repurchase			
Beginning balance	$ 651	$ 444	$ —
Realized and unrealized losses (gains)	(8)	1	(27)
Issuances	17	—	470
Settlements	(22)	—	—
Net transfers	(126)	206	1
Ending balance	$ 512	$ 651	$ 444
Unrealized losses (gains)	$ —	$ 1	$ (27)

$ in millions	2022	2021	2020
Other secured financings			
Beginning balance	$ 403	$ 516	$ 109
Realized and unrealized losses (gains)	**(6)**	(17)	21
Issuances	**39**	449	208
Settlements	**(342)**	(518)	(217)
Net transfers	**(3)**	(27)	395
Ending balance	**$ 91**	$ 403	$ 516
Unrealized losses (gains)	**$ (6)**	$ (16)	$ 21
Borrowings			
Beginning balance	$ 2,157	$ 4,374	$ 4,088
Realized and unrealized losses (gains)	**(133)**	(99)	204
Issuances	**513**	717	980
Settlements	**(285)**	(448)	(461)
Net transfers[2]	**(665)**	(2,387)	(437)
Ending balance	**$ 1,587**	$ 2,157	$ 4,374
Unrealized losses (gains)	**$ (138)**	$ (114)	$ 201
Portion of unrealized losses (gains) recorded in OCI—Change in net DVA	**(35)**	(17)	63

1. Net transfers in 2021 reflect the transfer in the third quarter of $895 million of equity margin loans from Level 3 to Level 2 as a result of the reduced significance of the margin loan rate input. Net transfers in 2020 reflect the largely offsetting impacts of equity margin loan transfers of $857 million into Level 3 in the first quarter and $707 million out of Level 3 in the second quarter, both driven by changes in the significance level of the margin loan rate input based on changes in liquidity conditions.
2. Net transfers in 2021 reflect the transfer in the second quarter of $2.0 billion of Corporate and other debt, $1.0 billion of net Equity derivatives and $2.2 billion of Borrowings from Level 3 to Level 2 as the unobservable inputs were not significant to the overall fair value measurements.
3. Net transfers in 2021 reflect the transfer in the first quarter of $2.5 billion of AFS securities from Level 3 to Level 2 due to increased trading activity and observability of pricing inputs. Purchases of AFS investment securities in 2020 relate to securities acquired as part of the E*TRADE transaction. For additional information on the acquisition of E*TRADE, see Note 3.

Level 3 instruments may be hedged with instruments classified in Level 1 and Level 2. The realized and unrealized gains or losses for assets and liabilities within the Level 3 category presented in the previous tables do not reflect the related realized and unrealized gains or losses on hedging instruments that have been classified by the Firm within the Level 1 and/or Level 2 categories.

The unrealized gains (losses) during the period for assets and liabilities within the Level 3 category may include changes in fair value during the period that were attributable to both observable and unobservable inputs. Total realized and unrealized gains (losses) are primarily included in Trading revenues in the income statement.

Additionally, in the previous tables, consolidations of VIEs are included in Purchases, and deconsolidations of VIEs are included in Settlements.

Significant Unobservable Inputs Used in Recurring and Nonrecurring Level 3 Fair Value Measurements

Valuation Techniques and Unobservable Inputs

	Balance / Range (Average[1])	
$ in millions, except inputs	At December 31, 2022	At December 31, 2021
Assets at Fair Value on a Recurring Basis		
Other sovereign government obligations	**$ 169**	$ 211
Comparable pricing:		
Bond price	**57 to 124 points (89 points)**	100 points to 140 points (120 points)
State and municipal securities	**$ 145**	$ 13
Comparable pricing:		
Bond price	**86 to 100 points (97points)**	N/M
MABS	**$ 416**	$ 344
Comparable pricing:		
Bond price	**0 to 95 points (68 points)**	0 to 86 points (59 points)
Loans and lending commitments	**$ 2,017**	$ 3,806
Margin loan model:		
Margin loan rate	**2% to 4% (3%)**	1% to 4% (3%)
Comparable pricing:		
Loan price	**87 to 105 points (99 points)**	89 to 101 points (97 points)
Corporate and other debt	**$ 2,096**	$ 1,973
Comparable pricing:		
Bond price	**51 to 132 points (90 points)**	50 to 163 points (99 points)
Discounted cash flow:		
Loss given default	**54% to 84% (62% / 54%)**	54% to 84% (62% / 54%)
Corporate equities	**$ 116**	$ 115
Comparable pricing:		
Equity price	**100%**	100%
Investments	**$ 923**	$ 1,125
Discounted cash flow:		
WACC	**15% to 17% (16%)**	10% to 16% (15%)
Exit multiple	**7 to 17 times (14 times)**	8 to 17 times (12 times)
Market approach:		
EBITDA multiple	**7 to 21 times (11 times)**	8 to 25 times (10 times)
Comparable pricing:		
Equity price	**24% to 100% (89%)**	43% to 100% (99%)
Net derivative and other contracts:		
Interest rate	**$ (151)**	$ 708
Option model:		
IR volatility skew	**105% to 130% (113% / 109%)**	39% to 79% (64% / 63%)
IR curve correlation	**47% to 100% (80% / 84%)**	62% to 98% (83% / 84%)
Bond volatility	**N/M**	5% to 32% (12% / 9%)
Inflation volatility	**22% to 65% (43% / 38%)**	24% to 65% (44% / 40%)
IR curve	**4% to 5% (5% / 5%)**	4% to 4% (4% / 4%)

	Balance / Range (Average[1])	
$ in millions, except inputs	**At December 31, 2022**	At December 31, 2021
Credit	**$ 110**	$ 98
Credit default swap model:		
Cash-synthetic basis	**7 points**	7 points
Bond price	**0 to 83 points (43 points)**	0 to 83 points (46 points)
Credit spread	**10 to 528 bps (115 bps)**	14 to 477 bps (68 bps)
Funding spread	**18 to 590 bps (93 bps)**	15 to 433 bps (55 bps)
Foreign exchange[2]	**$ 66**	$ 52
Option model:		
IR - FX correlation	**N/M**	53% to 56% (55% / 54%)
IR volatility skew	**N/M**	39% to 79% (64% / 63%)
IR curve	**-2% to 38% (8% / 4%)**	-1% to 7% (2% / 0%)
Foreign exchange volatility skew	**10% to 10% (10% / 10%)**	-4% to -2% (-3% / -3%)
Contingency probability	**95% to 95% (95% / 95%)**	90% to 95% (94% / 95%)
Equity[2]	**$ (736)**	$ (945)
Option model:		
Equity volatility	**5% to 96% (25%)**	5% to 99% (24%)
Equity volatility skew	**-4% to 0% (-1%)**	-4% to 0% (-1%)
Equity correlation	**10% to 93% (71%)**	5% to 99% (73%)
FX correlation	**-79% to 65% (-26%)**	-85% to 37% (-42%)
IR correlation	**10% to 30% (14)%**	13% to 30% (15%)
Commodity and other	**$ 1,083**	$ 1,529
Option model:		
Forward power price	**$1 to $292 ($43) per MWh**	$4 to $263 ($39) per MWh
Commodity volatility	**12% to 169% (34%)**	8% to 385% (22%)
Cross-commodity correlation	**70% to 100% (94%)**	43% to 100% (94%)
Liabilities at Fair Value on a Recurring Basis		
Deposits	**$ 20**	$ 67
Option model:		
Equity volatility	**N/M**	7%
Securities sold under agreements to repurchase	**$ 512**	$ 651
Discounted cash flow:		
Funding spread	**96 to 165 bps (131 bps)**	112 to 127 bps (120 bps)
Other secured financings	**$ 91**	$ 403
Comparable pricing:		
Loan price	**23 to 101 points (75 points)**	30 to 100 points (83 points)
Borrowings	**$ 1,587**	$ 2,157
Option model:		
Equity volatility	**7% to 86% (23%)**	7% to 85% (20%)
Equity volatility skew	**-2% to 0% (0%)**	-1% to 0% (0%)
Equity correlation	**39% to 98% (86%)**	41% to 95% (81%)
Equity - FX correlation	**-50% to 0% (-21%)**	-55% to 25% (-30%)
IR - FX Correlation	**N/M**	-26% to 8% (-5% / -5%)
IR - Volatility skew	**47% to 136% (74% / 59%)**	N/M
Discounted cash flow:		
Loss given default	**54% to 84% (62% / 54%)**	54% to 84% (62% / 54%)
Nonrecurring Fair Value Measurement		
Loans	**$ 6,610**	$ 1,576
Corporate loan model:		
Credit spread	**91 to 1276 bps (776 bps)**	108 to 565 bps (284 bps)
Comparable pricing:		
Loan price	**36 to 80 points (65 points)**	40 to 80 points (61 points)
Warehouse model:		
Credit spread	**110 to 319 bps (245 bps)**	182 to 446 bps (376 bps)

Points—Percentage of par
IR—Interest rate
FX—Foreign exchange
1. A single amount is disclosed for range and average when there is no significant difference between the minimum, maximum and average. Amounts represent weighted averages except where simple averages and the median of the inputs are more relevant.
2. Includes derivative contracts with multiple risks (*i.e.*, hybrid products).

The previous table provides information on the valuation techniques, significant unobservable inputs, and the ranges and averages for each major category of assets and liabilities measured at fair value on a recurring and nonrecurring basis with a significant Level 3 balance. The level of aggregation and breadth of products cause the range of inputs to be wide and not evenly distributed across the inventory of financial instruments. Further, the range of unobservable inputs may differ across firms in the financial services industry because of diversity in the types of products included in each firm's inventory. Generally, there are no predictable relationships between multiple significant unobservable inputs attributable to a given valuation technique.

During 2022, there were no significant revisions made to the descriptions of the Firm's significant unobservable inputs.

An increase (decrease) to the following significant unobservable inputs would generally result in a higher (lower) fair value.

- *Comparable Bond or Loan Price.* A pricing input used when prices for the identical instrument are not available. Significant subjectivity may be involved when fair value is determined using pricing data available for comparable instruments. Valuation using comparable instruments can be done by calculating an implied yield (or spread over a liquid benchmark) from the price of a comparable bond or loan, then adjusting that yield (or spread) to derive a value for the bond or loan. The adjustment to yield (or spread) should account for relevant differences in the bonds or

loans such as maturity or credit quality. Alternatively, a price-to-price basis can be assumed between the comparable instrument and the bond or loan being valued in order to establish the value of the bond or loan.

- *Comparable Equity Price.* A price derived from equity raises, share buybacks and external bid levels, etc. A discount or premium may be included in the fair value estimate.
- *Contingency Probability.* Probability associated with the realization of an underlying event upon which the value of an asset is contingent.
- *EBITDA Multiple/Exit Multiple.* The ratio of Enterprise Value to EBITDA, where enterprise value is the aggregate value of equity and debt minus cash and cash equivalents. The EBITDA multiple reflects the value of a company in terms of its full-year EBITDA, whereas the exit multiple reflects the value of a company in terms of its full-year expected EBITDA at exit. Either multiple allows comparison between companies from an operational perspective as the effect of capital structure, taxation and depreciation/amortization is excluded.

An increase (decrease) to the following significant unobservable inputs would generally result in a lower (higher) fair value.

- *Cash-Synthetic Basis.* The measure of the price differential between cash financial instruments and their synthetic derivative-based equivalents. The range disclosed in the previous table signifies the number of points by which the synthetic bond equivalent price is higher than the quoted price of the underlying cash bonds.
- *Funding Spread.* The cost of borrowing defined as the incremental spread over the OIS rate for a specific collateral rate (which refers to the rate applicable to a specific type of security pledged as collateral).
- *Loss Given Default.* Amount expressed as a percentage of par that is the expected loss when a credit event occurs.
- *Margin Loan Rate.* The annualized rate that reflects the possibility of losses as a result of movements in the price of the underlying margin loan collateral. The rate is calibrated from the discount rate, credit spreads and/or volatility measures.
- *WACC.* WACC represents the theoretical rate of return required to debt and equity investors. The WACC is used in a discounted cash flow model that calculates the value of the equity. The model assumes that the cash flow assumptions, including projections, are fully reflected in the current equity value, while the debt to equity ratio is held constant.

An increase (decrease) to the following significant unobservable inputs would generally result in an impact to the fair value, but the magnitude and direction of the impact would depend on whether the Firm is long or short the exposure.

- *Correlation.* A pricing input where the payoff is driven by more than one underlying risk. Correlation is a measure of the relationship between the movement of two variables (*i.e.*, how the change in one variable influences a change in the other variable).
- *Credit Spread.* The credit spread reflects the additional net yield an investor can earn from a security with more credit risk relative to one with less credit risk. The credit spread of a particular security is often quoted in relation to the yield on a credit risk-free benchmark security or reference rate.
- *Interest Rate Curve.* The term structure of interest rates (relationship between interest rates and the time to maturity) and a market's measure of future interest rates at the time of observation. An interest rate curve is used to set interest rate and foreign exchange derivative cash flows and is a pricing input used in the discounting of any OTC derivative cash flow.
- *Volatility.* The measure of variability in possible returns for an instrument given how much that instrument changes in value over time. Volatility is a pricing input for options, and, generally, the lower the volatility, the less risky the option. The level of volatility used in the valuation of a particular option depends on a number of factors, including the nature of the risk underlying that option, the tenor and the strike price of the option.
- *Volatility Skew.* The measure of the difference in implied volatility for options with identical underliers and expiry dates but with different strikes.

Net Asset Value Measurements

Fund Interests

	At December 31, 2022		At December 31, 2021	
$ in millions	Carrying Value	Commitment	Carrying Value	Commitment
Private equity	**$ 2,622**	**$ 638**	$ 2,492	$ 615
Real estate	**2,642**	**239**	2,064	248
Hedge[1]	**190**	**3**	191	2
Total	**$ 5,454**	**$ 880**	$ 4,747	$ 865

1. Investments in hedge funds may be subject to initial period lock-up or gate provisions, which restrict an investor from withdrawing from the fund during a certain initial period or restrict the redemption amount on any redemption date, respectively.

Amounts in the previous table represent the Firm's carrying value of general and limited partnership interests in fund investments, as well as any related performance-based income in the form of carried interest. The carrying amounts are measured based on the NAV of the fund taking into account the distribution terms applicable to the interest held. This same measurement applies whether the fund investments are accounted for under the equity method or fair value.

Private Equity. Funds that pursue multiple strategies, including leveraged buyouts, venture capital, infrastructure growth capital, distressed investments and mezzanine capital. In addition, the funds may be structured with a focus on specific geographic regions.

Real Estate. Funds that invest in real estate assets such as commercial office buildings, retail properties, multi-family residential properties, developments or hotels. In addition, the funds may be structured with a focus on specific geographic regions.

Investments in private equity and real estate funds generally are not redeemable due to the closed-end nature of these funds. Instead, distributions from each fund will be received as the underlying investments of the funds are disposed and monetized.

Hedge. Funds that pursue various investment strategies, including long-short equity, fixed income/credit, event-driven and multi-strategy.

See Note 15 for information regarding general partner guarantees, which include potential obligations to return performance fee distributions previously received. See Note 23 for information regarding unrealized carried interest at risk of reversal.

Nonredeemable Funds by Contractual Maturity

	Carrying Value at December 31, 2022	
$ in millions	Private Equity	Real Estate
Less than 5 years	**$ 1,086**	**$ 1,013**
5-10 years	**1,051**	**1,598**
Over 10 years	**485**	**31**
Total	**$ 2,622**	**$ 2,642**

Nonrecurring Fair Value Measurements

Assets and Liabilities Measured at Fair Value on a Nonrecurring Basis

	At December 31, 2022		
$ in millions	Level 2	Level 3[1]	Total
Assets			
Loans	**$ 4,193**	**$ 6,610**	**$ 10,803**
Other assets—Other investments	**—**	**7**	**7**
Other assets—ROU assets	**4**	**—**	**4**
Total	**$ 4,197**	**$ 6,617**	**$ 10,814**
Liabilities			
Other liabilities and accrued expenses—Lending commitments	**$ 275**	**$ 153**	**$ 428**
Total	**$ 275**	**$ 153**	**$ 428**

	At December 31, 2021		
$ in millions	Level 2	Level 3[1]	Total
Assets			
Loans	$ 4,035	$ 1,576	$ 5,611
Other assets—Other investments	—	8	8
Other assets—ROU assets	16	—	16
Total	$ 4,051	$ 1,584	$ 5,635
Liabilities			
Other liabilities and accrued expenses—Lending commitments	$ 173	$ 70	$ 243
Total	$ 173	$ 70	$ 243

1. For significant Level 3 balances, refer to "Significant Unobservable Inputs Used in Recurring and Nonrecurring Level 3 Fair Value Measurements" section herein for details of the significant unobservable inputs used for nonrecurring fair value measurement.

Gains (Losses) from Nonrecurring Fair Value Remeasurements[1]

$ in millions	2022	2021	2020
Assets			
Loans[2]	**$ (563)**	$ (89)	$ (354)
Goodwill	**—**	(8)	—
Intangibles	**—**	(3)	(2)
Other assets—Other investments[3]	**(14)**	(57)	(56)
Other assets—Premises, equipment and software[4]	**(6)**	(14)	(45)
Other assets—ROU assets[5]	**(11)**	(25)	(23)
Total	**$ (594)**	$ (196)	$ (480)
Liabilities			
Other liabilities and accrued expenses—Lending commitments[2]	**$ (137)**	$ 37	$ (5)
Total	**$ (137)**	$ 37	$ (5)

1. Gains and losses for Loans and Other assets—Other investments are classified in Other revenues. For other items, gains and losses are recorded in Other revenues if the item is held for sale; otherwise, they are recorded in Other expenses.
2. Nonrecurring changes in the fair value of loans and lending commitments, which exclude the impact of related economic hedges, are calculated as follows: for the held-for-investment category, based on the value of the underlying collateral; and for the held-for-sale category, based on recently executed transactions, market price quotations, valuation models that incorporate market observable inputs where possible, such as comparable loan or debt prices and CDS spread levels adjusted for any basis difference between cash and derivative instruments, or default recovery analysis where such transactions and quotations are unobservable.
3. Losses related to Other assets—Other investments were determined using techniques that included discounted cash flow models, methodologies that incorporate multiples of certain comparable companies and recently executed transactions.
4. Losses related to Other assets—Premises, equipment and software generally include impairments as well as write-offs related to the disposal of certain assets.
5. Losses related to Other assets—ROU assets include impairments related to the discontinued use of certain leased properties.

Financial Instruments Not Measured at Fair Value

	At December 31, 2022				
		Fair Value			
$ in millions	Carrying Value	Level 1	Level 2	Level 3	Total
Financial assets					
Cash and cash equivalents	$ 128,127	$128,127	$ —	$ —	$128,127
Investment securities—HTM	75,634	26,754	37,218	1,034	65,006
Securities purchased under agreements to resell	113,899	—	111,188	2,681	113,869
Securities borrowed	133,374	—	133,370	—	133,370
Customer and other receivables	73,248	—	69,268	3,664	72,932
Loans[1]	213,785	—	24,153	181,561	205,714
Other assets	704	—	704	—	704
Financial liabilities					
Deposits	$ 351,850	$ —	$351,721	$ —	$351,721
Securities sold under agreements to repurchase	61,670	—	61,620	—	61,620
Securities loaned	15,679	—	15,673	—	15,673
Other secured financings	3,608	—	3,608	—	3,608
Customer and other payables	216,018	—	216,018	—	216,018
Borrowings	159,338	—	157,780	4	157,784
	Commitment Amount				
Lending commitments[3]	$ 136,241	$ —	$ 1,789	$ 1,077	$ 2,866

	At December 31, 2021				
		Fair Value			
$ in millions	Carrying Value	Level 1	Level 2	Level 3	Total
Financial assets					
Cash and cash equivalents	$ 127,725	$127,725	$ —	$ —	$127,725
Investment securities—HTM	80,168	29,454	49,352	1,076	79,882
Securities purchased under agreements to resell	119,992	—	117,922	2,075	119,997
Securities borrowed	129,713	—	129,713	—	129,713
Customer and other receivables	91,664	—	88,091	3,442	91,533
Loans[1]	188,134	—	25,706	163,784	189,490
Other assets	528	—	528	—	528
Financial liabilities					
Deposits	$ 345,634	$ —	$345,911	$ —	$345,911
Securities sold under agreements to repurchase	61,397	—	61,419	—	61,419
Securities loaned	12,299	—	12,296	—	12,296
Other secured financings	4,908	—	4,910	—	4,910
Customer and other payables	228,631	—	228,631	—	228,631
Borrowings	156,787	—	162,154	4	162,158
	Commitment Amount				
Lending commitments[2]	$ 133,519	$ —	$ 890	$ 470	$ 1,360

1. Amounts include loans measured at fair value on a nonrecurring basis.
2. Represents Lending commitments accounted for as Held for Investment and Held for Sale. For a further discussion on lending commitments, see Note 15.

The previous tables exclude all non-financial assets and liabilities, such as Goodwill and Intangible assets, and certain financial instruments, such as equity method investments and certain receivables.

6. Fair Value Option

The Firm has elected the fair value option for certain eligible instruments that are risk managed on a fair value basis to mitigate income statement volatility caused by measurement basis differences between the elected instruments and their associated risk management transactions or to eliminate complexities of applying certain accounting models.

Borrowings Measured at Fair Value on a Recurring Basis

$ in millions	At December 31, 2022	At December 31, 2021
Business Unit Responsible for Risk Management		
Equity	$ 38,945	$ 37,046
Interest rates	26,077	28,638
Commodities	10,717	7,837
Credit	1,564	1,347
Foreign exchange	1,417	1,472
Total	$ 78,720	$ 76,340

Net Revenues from Borrowings under the Fair Value Option

$ in millions	2022	2021	2020
Trading revenues	$ 12,370	$ 899	$ (5,135)
Interest expense	293	305	341
Net revenues[1]	$ 12,077	$ 594	$ (5,476)

1. Amounts do not reflect any gains or losses from related economic hedges.

Gains (losses) from changes in fair value are recorded in Trading revenues and are mainly attributable to movements in the reference price or index, interest rates or foreign exchange rates.

Gains (Losses) Due to Changes in Instrument-Specific Credit Risk

$ in millions	Trading Revenues	OCI
2022		
Loans and other receivables[1]	$ (108)	$ —
Lending commitments	(12)	—
Deposits	—	(24)
Borrowings	—	2,006
2021		
Loans and other receivables[1]	$ 278	$ —
Lending commitments	2	—
Deposits	—	17
Borrowings	(36)	901
2020		
Loans and other receivables[1]	$ (116)	$ —
Lending commitments	(3)	—
Deposits	—	(19)
Borrowings	(26)	(1,340)

$ in millions	At December 31, 2022	At December 31, 2021
Cumulative pre-tax DVA gain (loss) recognized in AOCI	$ (457)	$ (2,439)

1. Loans and other receivables-specific credit gains (losses) were determined by excluding the non-credit components of gains and losses.

Difference between Contractual Principal and Fair Value[1]

$ in millions	At December 31, 2022	At December 31, 2021
Loans and other receivables[2]	$ 11,916	$ 12,633
Nonaccrual loans[2]	9,128	9,999
Borrowings[3]	5,203	(2,106)

1. Amounts indicate contractual principal greater than or (less than) fair value.
2. The majority of the difference between principal and fair value amounts for loans and other receivables relates to distressed debt positions purchased at amounts well below par.
3. Excludes borrowings where the repayment of the initial principal amount fluctuates based on changes in a reference price or index.

The previous tables exclude non-recourse debt from consolidated VIEs, liabilities related to transfers of financial assets treated as collateralized financings, pledged commodities and other liabilities that have specified assets attributable to them.

Fair Value Loans on Nonaccrual Status

$ in millions	At December 31, 2022	At December 31, 2021
Nonaccrual loans	$ 585	$ 989
Nonaccrual loans 90 or more days past due	$ 116	$ 363

7. Derivative Instruments and Hedging Activities

The Firm trades and makes markets globally in listed futures, OTC swaps, forwards, options and other derivatives referencing, among other things, interest rates, equities, currencies, investment grade and non-investment grade corporate credits, loans, bonds, U.S. and other sovereign securities, emerging market bonds and loans, credit indices, ABS indices, property indices, mortgage-related and other ABS, and real estate loan products. The Firm uses these instruments for market-making, managing foreign currency and credit exposure, and asset/liability management.

The Firm manages its market-making positions by employing a variety of risk mitigation strategies. These strategies include diversification of risk exposures and hedging. Hedging activities consist of the purchase or sale of positions in related securities and financial instruments, including a variety of derivative products (*e.g.*, futures, forwards, swaps and options). The Firm manages the market risk associated with its market-making activities on a Firmwide basis, on a worldwide trading division level and on an individual product basis.

Fair Values of Derivative Contracts

	Assets at December 31, 2022			
$ in millions	Bilateral OTC	Cleared OTC	Exchange-Traded	Total
Designated as accounting hedges				
Interest rate	$ 62	$ 1	$ —	$ 63
Foreign exchange	15	44	—	59
Total	77	45	—	122
Not designated as accounting hedges				
Economic hedges of loans				
Credit	2	59	—	61
Other derivatives				
Interest rate	141,291	29,007	1,029	171,327
Credit	5,888	2,352	—	8,240
Foreign exchange	113,540	2,337	62	115,939
Equity	16,505	—	26,850	43,355
Commodity and other	24,298	—	6,164	30,462
Total	301,524	33,755	34,105	369,384
Total gross derivatives	$ 301,601	$ 33,800	$ 34,105	$ 369,506
Amounts offset				
Counterparty netting	(214,773)	(32,250)	(32,212)	(279,235)
Cash collateral netting	(44,711)	(1,348)	—	(46,059)
Total in Trading assets	$ 42,117	$ 202	$ 1,893	$ 44,212
Amounts not offset[1]				
Financial instruments collateral	(19,406)	—	—	(19,406)
Net amounts	$ 22,711	$ 202	$ 1,893	$ 24,806
Net amounts for which master netting or collateral agreements are not in place or may not be legally enforceable				$ 4,318

	Liabilities at December 31, 2022			
$ in millions	Bilateral OTC	Cleared OTC	Exchange-Traded	Total
Designated as accounting hedges				
Interest rate	$ 457	$ 4	$ —	$ 461
Foreign exchange	550	101	—	651
Total	1,007	105	—	1,112
Not designated as accounting hedges				
Economic hedges of loans				
Credit	9	368	—	377
Other derivatives				
Interest rate	135,661	28,581	455	164,697
Credit	5,535	2,390	—	7,925
Foreign exchange	110,322	2,512	104	112,938
Equity	23,138	—	28,193	51,331
Commodity and other	19,631	—	6,748	26,379
Total	294,296	33,851	35,500	363,647
Total gross derivatives	$ 295,303	$ 33,956	$ 35,500	$ 364,759
Amounts offset				
Counterparty netting	(214,773)	(32,250)	(32,212)	(279,235)
Cash collateral netting	(45,884)	(1,505)	—	(47,389)
Total in Trading liabilities	$ 34,646	$ 201	$ 3,288	$ 38,135
Amounts not offset[1]				
Financial instruments collateral	(2,545)	—	(1,139)	(3,684)
Net amounts	$ 32,101	$ 201	$ 2,149	$ 34,451
Net amounts for which master netting or collateral agreements are not in place or may not be legally enforceable				$ 6,430

	Assets at December 31, 2021			
$ in millions	Bilateral OTC	Cleared OTC	Exchange-Traded	Total
Designated as accounting hedges				
Interest rate	$ 594	$ 1	$ —	$ 595
Foreign exchange	191	6	—	197
Total	785	7	—	792
Not designated as accounting hedges				
Economic hedges of loans				
Credit	—	15	—	15
Other derivatives				
Interest rate	147,585	7,002	383	154,970
Credit	5,749	3,186	—	8,935
Foreign exchange	73,276	1,219	39	74,534
Equity	28,877	—	41,455	70,332
Commodity and other	22,175	—	5,538	27,713
Total	277,662	11,422	47,415	336,499
Total gross derivatives	$ 278,447	$ 11,429	$ 47,415	$ 337,291
Amounts offset				
Counterparty netting	(201,729)	(9,818)	(42,883)	(254,430)
Cash collateral netting	(43,495)	(1,212)	—	(44,707)
Total in Trading assets	$ 33,223	$ 399	$ 4,532	$ 38,154
Amounts not offset[1]				
Financial instruments collateral	(10,457)	—	—	(10,457)
Net amounts	$ 22,766	$ 399	$ 4,532	$ 27,697
Net amounts for which master netting or collateral agreements are not in place or may not be legally enforceable				$ 6,725

	Liabilities at December 31, 2021			
$ in millions	Bilateral OTC	Cleared OTC	Exchange-Traded	Total
Designated as accounting hedges				
Interest rate	$ 86	$ 1	$ —	$ 87
Foreign exchange	57	50	—	107
Total	143	51	—	194
Not designated as accounting hedges				
Economic hedges of loans				
Credit	17	412	—	429
Other derivatives				
Interest rate	140,770	6,112	233	147,115
Credit	5,609	3,463	—	9,072
Foreign exchange	71,851	1,196	41	73,088
Equity	39,597	—	41,081	80,678
Commodity and other	17,188	—	5,740	22,928
Total	275,032	11,183	47,095	333,310
Total gross derivatives	$ 275,175	$ 11,234	$ 47,095	$ 333,504
Amounts offset				
Counterparty netting	(201,729)	(9,818)	(42,883)	(254,430)
Cash collateral netting	(43,305)	(1,201)	—	(44,506)
Total in Trading liabilities	$ 30,141	$ 215	$ 4,212	$ 34,568
Amounts not offset[1]				
Financial instruments collateral	(5,866)	(8)	(39)	(5,913)
Net amounts	$ 24,275	$ 207	$ 4,173	$ 28,655
Net amounts for which master netting or collateral agreements are not in place or may not be legally enforceable				$ 6,194

1. Amounts relate to master netting agreements and collateral agreements that have been determined by the Firm to be legally enforceable in the event of default but where certain other criteria are not met in accordance with applicable offsetting accounting guidance.

See Note 5 for information related to the unsettled fair value of futures contracts not designated as accounting hedges, which are excluded from the previous tables.

Notionals of Derivative Contracts

	Assets at December 31, 2022			
$ in billions	Bilateral OTC	Cleared OTC	Exchange-Traded	Total
Designated as accounting hedges				
Interest rate	**$ 2**	**$ 62**	**$ —**	**$ 64**
Foreign exchange	**2**	**2**	**—**	**4**
Total	**4**	**64**	**—**	**68**
Not designated as accounting hedges				
Economic hedges of loans				
Credit	**—**	**3**	**—**	**3**
Other derivatives				
Interest rate	**3,404**	**7,609**	**614**	**11,627**
Credit	**190**	**130**	**—**	**320**
Foreign exchange	**3,477**	**126**	**15**	**3,618**
Equity	**488**	**—**	**358**	**846**
Commodity and other	**141**	**—**	**59**	**200**
Total	**7,700**	**7,868**	**1,046**	**16,614**
Total gross derivatives	**$ 7,704**	**$ 7,932**	**$ 1,046**	**$ 16,682**

	Liabilities at December 31, 2022			
$ in billions	Bilateral OTC	Cleared OTC	Exchange-Traded	Total
Designated as accounting hedges				
Interest rate	**$ 3**	**$ 187**	**$ —**	**$ 190**
Foreign exchange	**12**	**2**	**—**	**14**
Total	**15**	**189**	**—**	**204**
Not designated as accounting hedges				
Economic hedges of loans				
Credit	**—**	**15**	**—**	**15**
Other derivatives				
Interest rate	**3,436**	**7,761**	**497**	**11,694**
Credit	**199**	**125**	**—**	**324**
Foreign exchange	**3,516**	**123**	**35**	**3,674**
Equity	**488**	**—**	**552**	**1,040**
Commodity and other	**101**	**—**	**79**	**180**
Total	**7,740**	**8,024**	**1,163**	**16,927**
Total gross derivatives	**$ 7,755**	**$ 8,213**	**$ 1,163**	**$ 17,131**

	Assets at December 31, 2021			
$ in billions	Bilateral OTC	Cleared OTC	Exchange-Traded	Total
Designated as accounting hedges				
Interest rate	$ 4	$ 104	$ —	$ 108
Foreign exchange	8	1	—	9
Total	12	105	—	117
Not designated as accounting hedges				
Economic hedges of loans				
Credit	—	—	—	—
Other derivatives				
Interest rate	3,488	7,082	570	11,140
Credit	216	105	—	321
Foreign exchange	3,386	95	10	3,491
Equity	495	—	407	902
Commodity and other	139	—	73	212
Total	7,724	7,282	1,060	16,066
Total gross derivatives	$ 7,736	$ 7,387	$ 1,060	$ 16,183

$ in billions	Liabilities at December 31, 2021 Bilateral OTC	Cleared OTC	Exchange-Traded	Total
Designated as accounting hedges				
Interest rate	$ —	$ 99	$ —	$ 99
Foreign exchange	5	3	—	8
Total	5	102	—	107
Not designated as accounting hedges				
Economic hedges of loans				
Credit	1	12	—	13
Other derivatives				
Interest rate	3,827	6,965	445	11,237
Credit	225	106	—	331
Foreign exchange	3,360	88	12	3,460
Equity	552	—	735	1,287
Commodity and other	110	—	81	191
Total	8,075	7,171	1,273	16,519
Total gross derivatives	$ 8,080	$ 7,273	$ 1,273	$ 16,626

The notional amounts of derivative contracts generally overstate the Firm's exposure. In most circumstances, notional amounts are used only as a reference point from which to calculate amounts owed between the parties to the contract. Furthermore, notional amounts do not reflect the benefit of legally enforceable netting arrangements or risk mitigating transactions.

Gains (Losses) on Accounting Hedges

$ in millions	2022	2021	2020
Fair value hedges—Recognized in Interest income			
Interest rate contracts	**$ 1,928**	$ 742	$ 75
Investment Securities—AFS	**(1,838)**	(629)	(33)
Fair value hedges—Recognized in Interest expense			
Interest rate contracts	**$ (15,159)**	$ (4,306)	$ 4,678
Deposits	**124**	88	(100)
Borrowings	**15,042**	4,214	(4,692)
Net investment hedges—Foreign exchange contracts			
Recognized in OCI	**$ 657**	$ 664	$ (366)
Forward points excluded from hedge effectiveness testing—Recognized in Interest income	**(33)**	(53)	16
Cash flow hedges—Interest rate contracts[1]			
Recognized in OCI	**$ (4)**	$ —	$ —
Realized gains (losses) (pre-tax) reclassified from AOCI to interest income	**—**	—	—
Net change in cash flow hedges included within AOCI	**(4)**	—	—

1. For the year ended 2022, there were no forecasted transactions that failed to occur. The net gains (losses) associated with cash flow hedges expected to be reclassified from AOCI within 12 months as of December 31, 2022 is approximately $0.2 million. The maximum length of time over which forecasted cash flows are hedged is 2 years.

Fair Value Hedges—Hedged Items

$ in millions	At December 31, 2022	At December 31, 2021
Investment securities—AFS		
Amortized cost basis currently or previously hedged	**$ 34,073**	$ 17,902
Basis adjustments included in amortized cost[1]	**$ (1,628)**	$ (591)
Deposits		
Carrying amount currently or previously hedged	**$ 3,735**	$ 6,279
Basis adjustments included in carrying amount[1]	**$ (119)**	$ 5
Borrowings		
Carrying amount currently or previously hedged	**$ 146,025**	$ 122,919
Basis adjustments included in carrying amount—Outstanding hedges	**$ (12,748)**	$ 2,324
Basis adjustments included in carrying amount—Terminated hedges	**$ (715)**	$ (743)

1. Hedge accounting basis adjustments are primarily related to outstanding hedges.

Gains (Losses) on Economic Hedges of Loans

$ in millions	2022	2021	2020
Recognized in Other revenues			
Credit contracts[1]	**(62)**	(285)	9

1. Amounts related to hedges of certain held-for-investment and held-for-sale loans.

Derivatives with Credit Risk-Related Contingencies

Net Derivative Liabilities and Collateral Posted

$ in millions	At December 31, 2022	At December 31, 2021
Net derivative liabilities with credit risk-related contingent features	**$ 20,287**	$ 20,548
Collateral posted	**12,268**	14,789

The previous table presents the aggregate fair value of certain derivative contracts that contain credit risk-related contingent features that are in a net liability position for which the Firm has posted collateral in the normal course of business.

Incremental Collateral and Termination Payments upon Potential Future Ratings Downgrade

$ in millions	At December 31, 2022
One-notch downgrade	**$ 577**
Two-notch downgrade	**412**
Bilateral downgrade agreements included in the amounts above[1]	**$ 937**

1. Amount represents arrangements between the Firm and other parties where upon the downgrade of one party, the downgraded party must deliver collateral to the other party. These bilateral downgrade arrangements are used by the Firm to manage the risk of counterparty downgrades.

The additional collateral or termination payments that may be called in the event of a future credit rating downgrade vary by contract and can be based on ratings by either or both of Moody's Investors Service, Inc. and S&P Global Ratings. The previous table shows the future potential collateral amounts and termination payments that could be called or required by counterparties or exchange and clearing organizations in the

event of one-notch or two-notch downgrade scenarios based on the relevant contractual downgrade triggers.

Maximum Potential Payout/Notional of Credit Protection Sold[1]

$ in billions	< 1	1-3	3-5	Over 5	Total
	Years to Maturity at December 31, 2022				
Single-name CDS					
Investment grade	**$ 12**	**$ 29**	**$ 29**	**$ 9**	**$ 79**
Non-investment grade	**5**	**13**	**16**	**2**	**36**
Total	**$ 17**	**$ 42**	**$ 45**	**$ 11**	**$ 115**
Index and basket CDS					
Investment grade	**$ 3**	**$ 13**	**$ 37**	**$ 3**	**$ 56**
Non-investment grade	**8**	**17**	**108**	**19**	**152**
Total	**$ 11**	**$ 30**	**$ 145**	**$ 22**	**$ 208**
Total CDS sold	**$ 28**	**$ 72**	**$ 190**	**$ 33**	**$ 323**
Other credit contracts	**—**	**—**	**—**	**—**	**—**
Total credit protection sold	**$ 28**	**$ 72**	**$ 190**	**$ 33**	**$ 323**
CDS protection sold with identical protection purchased					**$ 262**

$ in billions	< 1	1-3	3-5	Over 5	Total
	Years to Maturity at December 31, 2021				
Single-name CDS					
Investment grade	$ 10	$ 26	$ 29	$ 9	$ 74
Non-investment grade	5	13	17	2	37
Total	$ 15	$ 39	$ 46	$ 11	$ 111
Index and basket CDS					
Investment grade	$ 2	$ 11	$ 106	$ 15	$ 134
Non-investment grade	9	14	37	12	72
Total	$ 11	$ 25	$ 143	$ 27	$ 206
Total CDS sold	$ 26	$ 64	$ 189	$ 38	$ 317
Other credit contracts	—	—	—	—	—
Total credit protection sold	$ 26	$ 64	$ 189	$ 38	$ 317
CDS protection sold with identical protection purchased					$ 278

Fair Value Asset (Liability) of Credit Protection Sold[1]

$ in millions	At December 31, 2022	At December 31, 2021
Single-name CDS		
Investment grade	**$ 762**	$ 1,428
Non-investment grade	**(808)**	(370)
Total	**$ (46)**	$ 1,058
Index and basket CDS		
Investment grade	**$ 859**	$ 1,393
Non-investment grade	**(1,812)**	(650)
Total	**$ (953)**	$ 743
Total CDS sold	**$ (999)**	$ 1,801
Other credit contracts	**(1)**	(3)
Total credit protection sold	**$ (1,000)**	$ 1,798

1. Investment grade/non-investment grade determination is based on the internal credit rating of the reference obligation. Internal credit ratings serve as the CRM's assessment of credit risk and the basis for a comprehensive credit limits framework used to control credit risk. The Firm uses quantitative models and judgment to estimate the various risk parameters related to each obligor.

Protection Purchased with CDS

$ in billions	At December 31, 2022	At December 31, 2021
	Notional	
Single name	**$ 140**	$ 126
Index and basket	**173**	204
Tranched index and basket	**26**	18
Total	**$ 339**	$ 348

$ in millions	At December 31, 2022	At December 31, 2021
	Fair Value Asset (Liability)	
Single name	**$ (33)**	$ (1,338)
Index and basket	**1,248**	(563)
Tranched index and basket	**(217)**	(451)
Total	**$ 998**	$ (2,352)

The Firm enters into credit derivatives, principally CDS, under which it receives or provides protection against the risk of default on a set of debt obligations issued by a specified reference entity or entities. A majority of the Firm's counterparties for these derivatives are banks, broker-dealers, and insurance and other financial institutions.

The fair value amounts as shown in the previous tables are prior to cash collateral or counterparty netting.

The purchase of credit protection does not represent the sole manner in which the Firm risk manages its exposure to credit derivatives. The Firm manages its exposure to these derivative contracts through a variety of risk mitigation strategies, which include managing the credit and correlation risk across single-name, non-tranched indices and baskets, tranched indices and baskets, and cash positions. Aggregate market risk limits have been established for credit derivatives, and market risk measures are routinely monitored against these limits. The Firm may also recover amounts on the underlying reference obligation delivered to the Firm under CDS where credit protection was sold.

Single-Name CDS. A CDS protects the buyer against the loss of principal on a bond or loan in case of a default by the issuer. The protection buyer pays a periodic premium (generally quarterly) over the life of the contract and is protected for the period. The Firm, in turn, performs under a CDS if a credit event as defined under the contract occurs. Typical credit events include bankruptcy, dissolution or insolvency of the referenced entity, failure to pay and restructuring of the obligations of the referenced entity.

Index and Basket CDS. Index and basket CDS are products where credit protection is provided on a portfolio of single-name CDS. Generally, in the event of a default on one of the underlying names, the Firm pays a pro rata portion of the total notional amount of the CDS.

The Firm also enters into tranched index and basket CDS where credit protection is provided on a particular portion of the portfolio loss distribution. The most junior tranches cover initial defaults, and once losses exceed the notional of the

tranche, they are passed on to the next most senior tranche in the capital structure.

Other Credit Contracts. The Firm has invested in CLNs and CDOs, which are hybrid instruments containing embedded derivatives, in which credit protection has been sold to the issuer of the note. If there is a credit event of a reference entity underlying the instrument, the principal balance of the note may not be repaid in full to the Firm.

8. Investment Securities

AFS and HTM Securities

	At December 31, 2022			
$ in millions	Amortized Cost[1]	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
AFS securities				
U.S. Treasury securities	**$ 56,103**	**$ 17**	**$ 2,254**	**53,866**
U.S. agency securities[2]	**23,926**	**1**	**2,753**	**21,174**
Agency CMBS	**5,998**	**—**	**470**	**5,528**
State and municipal securities	**2,598**	**71**	**42**	**2,627**
FFELP student loan ABS[3]	**1,147**	**—**	**45**	**1,102**
Total AFS securities	**89,772**	**89**	**5,564**	**84,297**
HTM securities				
U.S. Treasury securities	**28,599**	**—**	**1,845**	**26,754**
U.S. agency securities[2]	**44,038**	**—**	**8,487**	**35,551**
Agency CMBS	**1,819**	**—**	**152**	**1,667**
Non-agency CMBS	**1,178**	**—**	**144**	**1,034**
Total HTM securities	**75,634**	**—**	**10,628**	**65,006**
Total investment securities	**$ 165,406**	**$ 89**	**$ 16,192**	**$149,303**

	At December 31, 2021			
$ in millions	Amortized Cost[1]	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
AFS securities				
U.S. Treasury securities	$ 58,974	$ 343	$ 296	$ 59,021
U.S. agency securities[2]	26,780	274	241	26,813
Agency CMBS	14,476	289	89	14,676
State and municipal securities	613	37	2	648
FFELP student loan ABS[3]	1,672	11	11	1,672
Total AFS securities	102,515	954	639	102,830
HTM securities				
U.S. Treasury securities	28,653	882	81	29,454
U.S. agency securities[2]	48,195	169	1,228	47,136
Agency CMBS	2,267	—	51	2,216
Non-agency CMBS	1,053	28	5	1,076
Total HTM securities	80,168	1,079	1,365	79,882
Total investment securities	$ 182,683	$ 2,033	$ 2,004	$182,712

1. Amounts are net of any ACL.
2. U.S. agency securities consist mainly of agency mortgage pass-through pool securities, CMOs and agency-issued debt.
3. Underlying loans are backed by a guarantee, ultimately from the U.S. Department of Education, of at least 95% of the principal balance and interest outstanding.

Investment Securities in an Unrealized Loss Position

	At December 31, 2022		At December 31, 2021	
$ in millions	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
U.S. Treasury securities				
Less than12 months	**$ 42,144**	**$ 1,711**	$ 31,459	$ 296
12 months or longer	**11,454**	**543**	—	—
Total	**53,598**	**2,254**	31,459	296
U.S. agency securities				
Less than12 months	**13,662**	**1,271**	12,283	219
12 months or longer	**7,060**	**1,482**	1,167	22
Total	**20,722**	**2,753**	13,450	241
Agency CMBS				
Less than12 months	**5,343**	**448**	2,872	89
12 months or longer	**185**	**22**	10	—
Total	**5,528**	**470**	2,882	89
State and municipal securities				
Less than12 months	**2,106**	**40**	21	2
12 months or longer	**65**	**2**	7	—
Total	**2,171**	**42**	28	2
FFELP student loan ABS				
Less than12 months	**627**	**23**	320	1
12 months or longer	**476**	**22**	591	10
Total	**1,103**	**45**	911	11
Total AFS securities in an unrealized loss position				
Less than12 months	**63,882**	**3,493**	46,955	607
12 months or longer	**19,240**	**2,071**	1,775	32
Total	**$ 83,122**	**$ 5,564**	$ 48,730	$ 639

For AFS securities, the Firm believes there are no securities in an unrealized loss position that have credit losses after performing the analysis described in Note 2. Additionally, the Firm does not intend to sell these securities and is not likely to be required to sell these securities prior to recovery of the amortized cost basis. As of December 31, 2022 and December 31, 2021, the securities in an unrealized loss position are predominantly investment grade.

The HTM securities net carrying amounts at December 31, 2022 and December 31, 2021 reflect an ACL of $34 million and $33 million, respectively, predominantly related to Non-agency CMBS. See Note 2 for a description of the ACL methodology used for HTM Securities. As of December 31, 2022 and December 31, 2021, Non-Agency CMBS HTM securities were predominantly on accrual status and investment grade.

See Note 16 for additional information on securities issued by VIEs, including U.S. agency mortgage-backed securities, non-agency CMBS, and FFELP student loan ABS.

Investment Securities by Contractual Maturity

$ in millions	At December 31, 2022 Amortized Cost[1]	Fair Value	Annualized Average Yield[2,3]
AFS securities			
U.S. Treasury securities:			
Due within 1 year	$ 15,047	$ 14,752	1.0 %
After 1 year through 5 years	38,454	36,529	1.3 %
After 5 years through 10 years	2,602	2,585	1.3 %
Total	56,103	53,866	
U.S. agency securities:			
Due within 1 year	6	7	1.0 %
After 1 year through 5 years	406	375	1.4 %
After 5 years through 10 years	852	777	1.8 %
After 10 years	22,662	20,015	2.7 %
Total	23,926	21,174	
Agency CMBS:			
Due within 1 year	7	7	1.7 %
After 1 year through 5 years	1,548	1,466	1.8 %
After 5 years through 10 years	3,170	2,983	2.0 %
After 10 years	1,273	1,072	1.3 %
Total	5,998	5,528	
State and municipal securities:			
Due within 1 year	40	40	3.4 %
After 1 year through 5 years	66	68	3.7 %
After 5 years through 10 years	148	152	3.7 %
After 10 years	2,344	2,367	3.7 %
Total	2,598	2,627	
FFELP student loan ABS:			
After 1 year through 5 years	115	109	5.1 %
After 5 years through 10 years	120	114	5.0 %
After 10 years	912	879	5.1 %
Total	1,147	1,102	
Total AFS securities	89,772	84,297	1.8 %

$ in millions	At December 31, 2022 Amortized Cost[1]	Fair Value	Annualized Average Yield[2]
HTM securities			
U.S. Treasury securities:			
Due within 1 year	$ 5,437	$ 5,328	1.7 %
After 1 year through 5 years	17,736	16,744	1.9 %
After 5 years through 10 years	3,866	3,528	2.4 %
After 10 years	1,560	1,154	2.3 %
Total	28,599	26,754	
U.S. agency securities:			
After 5 years through 10 years	378	348	2.1 %
After 10 years	43,660	35,203	1.8 %
Total	44,038	35,551	
Agency CMBS:			
Due within 1 year	68	67	0.9 %
After 1 year through 5 years	1,399	1,303	1.3 %
After 5 years through 10 years	220	189	1.4 %
After 10 years	132	108	1.6 %
Total	1,819	1,667	
Non-agency CMBS:			
Due within 1 year	198	197	4.0 %
After 1 year through 5 years	210	191	4.0 %
After 5 years through 10 years	735	616	3.8 %
After 10 years	35	30	3.6 %
Total	1,178	1,034	
Total HTM securities	75,634	65,006	1.9 %
Total investment securities	$ 165,406	$ 149,303	1.8 %

1. Amounts are net of any ACL.
2. Annualized average yield is computed using the effective yield, weighted based on the amortized cost of each security. The effective yield is shown pre-tax and excludes the effect of related hedging derivatives.
3. At December 31, 2022, the annualized average yield, including the interest rate swap accrual of related hedges, was 1.1% for AFS securities contractually maturing within 1 year and 2.3% for all AFS securities.

Gross Realized Gains (Losses) on Sales of AFS Securities

$ in millions	2022	2021	2020
Gross realized gains	$ 164	$ 237	$ 168
Gross realized (losses)	(94)	(27)	(31)
Total[1]	$ 70	$ 210	$ 137

1. Realized gains and losses are recognized in Other revenues in the income statement.

9. Collateralized Transactions

The Firm enters into securities purchased under agreements to resell, securities sold under agreements to repurchase, securities borrowed and securities loaned transactions to, among other things, acquire securities to cover short positions and settle other securities obligations, to accommodate customers' needs and to finance its inventory positions.

The Firm monitors the fair value of the underlying securities as compared with the related receivable or payable, including accrued interest, and, as necessary, requests additional collateral, as provided under the applicable agreement to ensure such transactions are adequately collateralized, or returns excess collateral.

The risk related to a decline in the market value of collateral pledged or received is managed by setting appropriate market-

based margin requirements. Increases in collateral margin calls on secured financing due to market value declines may be mitigated by increases in collateral margin calls on securities purchased under agreements to resell and securities borrowed transactions with similar quality collateral. Additionally, the Firm may request lower quality collateral pledged be replaced with higher quality collateral through collateral substitution rights in the underlying agreements.

The Firm actively manages its secured financings in a manner that reduces the potential refinancing risk of secured financings of less liquid assets and also considers the quality of collateral when negotiating collateral eligibility with counterparties. The Firm utilizes shorter term secured financing for highly liquid assets and has established longer tenor limits for less liquid assets, for which funding may be at risk in the event of a market disruption.

Offsetting of Certain Collateralized Transactions

	At December 31, 2022				
$ in millions	Gross Amounts	Amounts Offset	Balance Sheet Net Amounts	Amounts Not Offset[1]	Net Amounts
Assets					
Securities purchased under agreements to resell	**$240,355**	**$(126,448)**	**$ 113,907**	**$(109,902)**	**$ 4,005**
Securities borrowed	**145,340**	**(11,966)**	**133,374**	**(128,073)**	**5,301**
Liabilities					
Securities sold under agreements to repurchase	**$188,982**	**$(126,448)**	**$ 62,534**	**$ (57,395)**	**$ 5,139**
Securities loaned	**27,645**	**(11,966)**	**15,679**	**(15,199)**	**480**
Net amounts for which master netting agreements are not in place or may not be legally enforceable					
Securities purchased under agreements to resell					**$ 1,696**
Securities borrowed					**624**
Securities sold under agreements to repurchase					**3,861**
Securities loaned					**250**

	At December 31, 2021				
$ in millions	Gross Amounts	Amounts Offset	Balance Sheet Net Amounts	Amounts Not Offset[1]	Net Amounts
Assets					
Securities purchased under agreements to resell	$197,486	$ (77,487)	$ 119,999	$(106,896)	$ 13,103
Securities borrowed	139,395	(9,682)	129,713	(124,028)	5,685
Liabilities					
Securities sold under agreements to repurchase	$139,675	$ (77,487)	$ 62,188	$ (53,692)	$ 8,496
Securities loaned	21,981	(9,682)	12,299	(12,019)	280
Net amounts for which master netting agreements are not in place or may not be legally enforceable					
Securities purchased under agreements to resell					$ 12,514
Securities borrowed					1,041
Securities sold under agreements to repurchase					8,295
Securities loaned					139

1. Amounts relate to master netting agreements that have been determined by the Firm to be legally enforceable in the event of default but where certain other criteria are not met in accordance with applicable offsetting accounting guidance.

For information related to offsetting of derivatives, see Note 7.

Gross Secured Financing Balances by Remaining Contractual Maturity

	At December 31, 2022				
$ in millions	Overnight and Open	Less than 30 Days	30-90 Days	Over 90 Days	Total
Securities sold under agreements to repurchase	**$ 54,551**	**$ 77,359**	**$20,586**	**$36,486**	**$188,982**
Securities loaned	**15,150**	**882**	**1,984**	**9,629**	**27,645**
Total included in the offsetting disclosure	**$ 69,701**	**$ 78,241**	**$22,570**	**$46,115**	**$216,627**
Trading liabilities—Obligation to return securities received as collateral	**22,880**	**—**	**—**	**—**	**22,880**
Total	**$ 92,581**	**$ 78,241**	**$22,570**	**$46,115**	**$239,507**

	At December 31, 2021				
$ in millions	Overnight and Open	Less than 30 Days	30-90 Days	Over 90 Days	Total
Securities sold under agreements to repurchase	$ 29,271	$ 53,987	$17,099	$39,318	$139,675
Securities loaned	11,480	364	650	9,487	21,981
Total included in the offsetting disclosure	$ 40,751	$ 54,351	$17,749	$48,805	$161,656
Trading liabilities—Obligation to return securities received as collateral	30,104	—	—	—	30,104
Total	$ 70,855	$ 54,351	$17,749	$48,805	$191,760

Gross Secured Financing Balances by Class of Collateral Pledged

$ in millions	**At December 31, 2022**	At December 31, 2021
Securities sold under agreements to repurchase		
U.S. Treasury and agency securities	**$ 57,761**	$ 30,790
Other sovereign government obligations	**98,839**	73,063
Corporate equities	**19,340**	25,881
Other	**13,042**	9,941
Total	**$ 188,982**	$ 139,675
Securities loaned		
Other sovereign government obligations	**$ 862**	$ 748
Corporate equities	**26,289**	20,656
Other	**494**	577
Total	**$ 27,645**	$ 21,981
Total included in the offsetting disclosure	**$ 216,627**	$ 161,656
Trading liabilities—Obligation to return securities received as collateral		
Corporate equities	**$ 22,833**	$ 30,048
Other	**47**	56
Total	**$ 22,880**	$ 30,104
Total	**$ 239,507**	$ 191,760

Carrying Value of Assets Loaned or Pledged without Counterparty Right to Sell or Repledge

$ in millions	**At December 31, 2022**	At December 31, 2021
Trading assets	**$ 34,524**	$ 32,458

The Firm pledges certain of its trading assets to collateralize securities sold under agreements to repurchase, securities loaned, other secured financings and derivatives and to cover customer short sales. Counterparties may or may not have the right to sell or repledge the collateral.

Pledged financial instruments that can be sold or repledged by the secured party are identified as Trading assets (pledged to various parties) in the balance sheet.

Fair Value of Collateral Received with Right to Sell or Repledge

$ in millions	At December 31, 2022	At December 31, 2021
Collateral received with right to sell or repledge	$ 637,941	$ 672,104
Collateral that was sold or repledged[1]	486,820	510,000

1. Does not include securities used to meet federal regulations for the Firm's U.S. broker-dealers.

The Firm receives collateral in the form of securities in connection with securities purchased under agreements to resell, securities borrowed, securities-for-securities transactions, derivative transactions, customer margin loans and securities-based lending. In many cases, the Firm is permitted to sell or repledge this collateral to secure securities sold under agreements to repurchase, to enter into securities lending and derivative transactions or to deliver to counterparties to cover short positions.

Securities Segregated for Regulatory Purposes

$ in millions	At December 31, 2022	At December 31, 2021
Segregated securities[1]	$ 32,254	$ 20,092

1. Securities segregated under federal regulations for the Firm's U.S. broker-dealers are sourced from Securities purchased under agreements to resell and Trading assets in the balance sheet.

Concentration Based on the Firm's Total Assets

	At December 31, 2022	At December 31, 2021
U.S. government and agency securities and other sovereign government obligations		
Trading assets[1]	9 %	9 %
Off balance sheet—Collateral received[2]	12 %	12 %

1. Other sovereign government obligations included in Trading assets primarily consist of obligations of the U.K., Japan and Brazil.
2. Collateral received is primarily related to Securities purchased under agreements to resell and Securities borrowed.

The Firm is subject to concentration risk by holding large positions in certain types of securities, loans or commitments to purchase securities of a single issuer, including sovereign governments and other entities, issuers located in a particular country or geographic area, public and private issuers involving developing countries or issuers engaged in a particular industry.

Positions taken and underwriting and financing commitments, including those made in connection with the Firm's private equity, principal investment and lending activities, often involve substantial amounts and significant exposure to individual issuers and businesses, including investment grade and non-investment grade issuers.

Customer Margin and Other Lending

$ in millions	At December 31, 2022	At December 31, 2021
Margin and other lending	$ 38,524	$ 71,532

The Firm provides margin lending arrangements that allow customers to borrow against the value of qualifying securities. Receivables from these arrangements are included within Customer and other receivables in the balance sheet. Under these arrangements, the Firm receives collateral, which includes U.S. government and agency securities, other sovereign government obligations, corporate and other debt, and corporate equities. Margin loans are collateralized by customer-owned securities held by the Firm. The Firm monitors required margin levels and established credit terms daily and, pursuant to such guidelines, requires customers to deposit additional collateral, or reduce positions, when necessary.

Margin loans are extended on a demand basis and generally are not committed facilities. Factors considered in the review of margin loans are the amount of the loan, the intended purpose, the degree of leverage being employed in the account and the amount of collateral, as well as an overall evaluation of the portfolio to ensure proper diversification or, in the case of concentrated positions, appropriate liquidity of the underlying collateral or potential hedging strategies to reduce risk. Underlying collateral for margin loans is reviewed with respect to the liquidity of the proposed collateral positions, valuation of securities, historic trading range, volatility analysis and an evaluation of industry concentrations. For these transactions, adherence to the Firm's collateral policies significantly limits its credit exposure in the event of a customer default. The Firm may request additional margin collateral from customers, if appropriate, and, if necessary, may sell securities that have not been paid for or purchase securities sold but not delivered from customers.

Also included in the amounts in the previous table is non-purpose securities-based lending on non-bank entities in the Wealth Management business segment.

Other Secured Financings

Other secured financings include the liabilities related to transfers of financial assets that are accounted for as financings rather than sales, consolidated VIEs where the Firm is deemed to be the primary beneficiary, and certain ELNs and other secured borrowings. These liabilities are generally payable from the cash flows of the related assets, which are accounted for as Trading assets (see Notes 14 and 16).

10. Loans, Lending Commitments and Related Allowance for Credit Losses

The Firm's held-for-investment and held-for-sale loan portfolios consist of the following types of loans:

- *Corporate.* Corporate includes revolving lines of credit, term loans and bridge loans made to corporate entities for a variety of purposes.
- *Secured Lending Facilities.* Secured lending facilities include loans provided to clients, which are collateralized by various assets, including residential and commercial real estate mortgage loans, investor commitments for capital calls, corporate loans and other assets.
- *Commercial Real Estate.* Commercial real estate loans include owner-occupied loans and income-producing loans.
- *Residential Real Estate.* Residential real estate loans mainly include non-conforming loans and HELOC.
- *Securities-based Lending and Other.* Securities-based lending includes loans that allow clients to borrow money against the value of qualifying securities for any suitable purpose other than purchasing, trading, or carrying securities or refinancing margin debt. The majority of these loans are structured as revolving lines of credit. Other primarily includes certain loans originated in the tailored lending business within the Wealth Management business segment.

Loans by Type

	At December 31, 2022		
$ in millions	HFI Loans	HFS Loans	Total Loans
Corporate	**$ 6,589**	**$ 10,634**	**$ 17,223**
Secured lending facilities	**35,606**	**3,176**	**38,782**
Commercial real estate	**8,515**	**926**	**9,441**
Residential real estate	**54,460**	**4**	**54,464**
Securities-based lending and Other loans	**94,666**	**48**	**94,714**
Total loans	**199,836**	**14,788**	**214,624**
ACL	**(839)**		**(839)**
Total loans, net	**$ 198,997**	**$ 14,788**	**$ 213,785**
Loans to non-U.S. borrowers, net			**$ 23,651**

	At December 31, 2021		
$ in millions	HFI Loans	HFS Loans	Total Loans
Corporate	$ 5,567	$ 8,107	$ 13,674
Secured lending facilities	31,471	3,879	35,350
Commercial real estate	7,227	1,777	9,004
Residential real estate	44,251	7	44,258
Securities-based lending and Other loans	86,440	62	86,502
Total loans	174,956	13,832	188,788
ACL	(654)		(654)
Total loans, net	$ 174,302	$ 13,832	$ 188,134
Loans to non-U.S. borrowers, net			$ 24,322

Loans by Interest Rate Type

	At December 31, 2022		At December 31, 2021	
$ in millions	Fixed Rate	Floating or Adjustable Rate	Fixed Rate	Floating or Adjustable Rate
Corporate	**$ —**	**$ 17,223**	$ —	$ 13,674
Secured lending facilities	**—**	**38,782**	—	35,350
Commercial real estate	**204**	**9,237**	343	8,661
Residential real estate	**24,903**	**29,561**	18,966	25,292
Securities-based lending and Other loans	**24,077**	**70,637**	22,832	63,670
Total loans, before ACL	**$ 49,184**	**$ 165,440**	$ 42,141	$ 146,647

See Note 5 for further information regarding Loans and lending commitments held at fair value. See Note 15 for details of current commitments to lend in the future.

Credit Quality

The CRM evaluates new obligors before credit transactions are initially approved and at least annually thereafter for corporate and commercial real estate loans. For Corporate, Secured lending facilities and Other loans, credit evaluations typically involve the evaluation of financial statements, assessment of leverage, liquidity, capital strength, asset composition and quality, market capitalization and access to capital markets, cash flow projections and debt service requirements, and the adequacy of collateral, if applicable. The CRM also evaluates strategy, market position, industry dynamics, obligor's management and other factors that could affect an obligor's risk profile.

For Commercial real estate loans, the credit evaluation is focused on property and transaction metrics, including property type, LTV ratio, occupancy levels, debt service ratio, prevailing capitalization rates and market dynamics.

For Residential real estate and Securities-based loans, the initial credit evaluation typically includes, but is not limited to, review of the obligor's income, net worth, liquidity, collateral, LTV ratio and credit bureau information. Subsequent credit monitoring for residential real estate loans is performed at the portfolio level. Securities-based loan collateral values are monitored on an ongoing basis.

For information related to credit quality indicators considered in developing the ACL, see Note 2.

Loans Held for Investment before Allowance by Origination Year

	At December 31, 2022			At December 31, 2021		
	Corporate					
$ in millions	IG	NIG	Total	IG	NIG	Total
Revolving	$ 2,554	$ 3,456	$ 6,010	$ 2,356	$ 2,328	$ 4,684
2022	6	107	113			
2021	—	139	139	—	85	85
2020	—	58	58	111	26	137
2019	—	154	154	—	176	176
2018	—	—	—	196	—	196
Prior	115	—	115	229	60	289
Total	$ 2,675	$ 3,914	$ 6,589	$ 2,892	$ 2,675	$ 5,567

	At December 31, 2022			At December 31, 2021		
	Secured Lending Facilities					
$ in millions	IG	NIG	Total	IG	NIG	Total
Revolving	$ 9,445	$ 21,243	$ 30,688	$ 7,603	$ 20,172	$ 27,775
2022	1,135	1,336	2,471			
2021	254	208	462	32	467	499
2020	—	98	98	35	160	195
2019	60	486	546	43	819	862
2018	—	274	274	297	703	1,000
Prior	215	852	1,067	144	996	1,140
Total	$ 11,109	$ 24,497	$ 35,606	$ 8,154	$ 23,317	$ 31,471

	At December 31, 2022			At December 31, 2021		
	Commercial Real Estate					
$ in millions	IG	NIG	Total	IG	NIG	Total
Revolving	$ —	$ 204	$ 204	$ 3	$ 149	$ 152
2022	379	2,201	2,580			
2021	239	1,609	1,848	423	1,292	1,715
2020	—	728	728	91	819	910
2019	659	1,152	1,811	976	1,266	2,242
2018	127	645	772	527	416	943
Prior	84	488	572	189	1,076	1,265
Total	$ 1,488	$ 7,027	$ 8,515	$ 2,209	$ 5,018	$ 7,227

	At December 31, 2022					
	Residential Real Estate					
	by FICO Scores			by LTV Ratio		
$ in millions	≥ 740	680-739	≤ 679	≤ 80%	> 80%	Total
Revolving	$ 90	$ 29	$ 5	$ 124	$ —	$ 124
2022	11,481	2,533	411	13,276	1,149	14,425
2021	11,604	2,492	257	13,378	975	14,353
2020	7,292	1,501	115	8,452	456	8,908
2019	4,208	946	137	4,968	323	5,291
2018	1,635	447	52	1,965	169	2,134
Prior	6,853	2,072	300	8,492	733	9,225
Total	$ 43,163	$ 10,020	$1,277	$ 50,655	$ 3,805	$ 54,460

	At December 31, 2021					
	Residential Real Estate					
	by FICO Scores			by LTV Ratio		
$ in millions	≥ 740	680-739	≤ 679	≤ 80%	> 80%	Total
Revolving	$ 65	$ 27	$ 4	$ 96	$ —	$ 96
2021	12,230	2,638	257	14,116	1,009	15,125
2020	7,941	1,648	131	9,210	510	9,720
2019	4,690	1,072	140	5,536	366	5,902
2018	1,865	497	55	2,231	186	2,417
Prior	8,130	2,477	384	10,073	918	10,991
Total	$ 34,921	$ 8,359	$ 971	$ 41,262	$ 2,989	$ 44,251

	At December 31, 2022			
	Securities-based Lending[1]	Other[2]		
$ in millions		IG	NIG	Total
Revolving	$ 77,115	$ 5,760	$ 1,480	$ 84,355
2022	1,425	1,572	269	3,266
2021	725	525	223	1,473
2020	—	580	418	998
2019	16	913	644	1,573
2018	202	268	304	774
Prior	—	1,581	646	2,227
Total	$ 79,483	$ 11,199	$ 3,984	$ 94,666

	At December 31, 2021			
	Securities-based Lending[1]	Other[2]		
$ in millions		IG	NIG	Total
Revolving	$ 71,485	$ 6,170	$ 858	$ 78,513
2021	807	708	103	1,618
2020	—	651	626	1,277
2019	19	1,079	633	1,731
2018	232	273	375	880
Prior	16	1,825	580	2,421
Total	$ 72,559	$ 10,706	$ 3,175	$ 86,440

IG—Investment Grade
NIG—Non-investment Grade
1. Securities-based loans are subject to collateral maintenance provisions, and at December 31, 2022 and December 31, 2021, these loans are predominantly over-collateralized. For more information on the ACL methodology related to securities-based loans, see Note 2.
2. Other loans primarily include certain loans originated in the tailored lending business within the Wealth Management business segment.

Past Due Loans Held for Investment before Allowance[1]

$ in millions	At December 31, 2022	At December 31, 2021
Corporate	$ 112	$ —
Secured lending facilities	85	—
Residential real estate	158	209
Securities-based lending and Other loans	1	—
Total	$ 356	$ 209

1. The majority of the amounts are past due for a period of greater than 90 days as of December 31, 2022, and the majority of the amounts are past due for a period of less than 60 days as of December 31, 2021.

Nonaccrual Loans Held for Investment before Allowance

$ in millions	At December 31, 2022	At December 31, 2021
Corporate	$ 71	$ 34
Secured lending facilities	94	375
Commercial real estate	209	195
Residential real estate	118	138
Securities-based lending and Other loans	10	151
Total[1]	$ 502	$ 893
Nonaccrual loans without an ACL	$ 117	$ 356

1. Includes all loans held for investment that are 90 days or more past due as of December 31, 2022 and December 31, 2021.

Troubled Debt Restructurings

$ in millions	At December 31, 2022	At December 31, 2021
Loans, before ACL	$ 29	$ 49
Allowance for credit losses	—	8

Table of Contents

Troubled debt restructurings typically include modifications of interest rates, collateral requirements, other loan covenants and payment extensions. See Note 2 for further information on TDRs guidance.

Allowance for Credit Losses Rollforward and Allocation—Loans

$ in millions	Corporate	Secured Lending Facilities	CRE	Residential Real Estate	SBL and Other	Total
December 31, 2021	$ 165	$ 163	$206	$ 60	$60	$654
Gross charge-offs	—	(3)	(7)	—	(21)	(31)
Recoveries	6	—	—	1	—	7
Net (charge-offs) recoveries	6	(3)	(7)	1	(21)	(24)
Provision (release)	65	(6)	80	26	51	216
Other	(1)	(1)	(4)	—	(1)	(7)
December 31, 2022	**$ 235**	**$ 153**	**$275**	**$ 87**	**$89**	**$839**
Percent of loans to total loans[1]	3 %	18 %	4 %	27 %	48 %	100 %

$ in millions	Corporate	Secured Lending Facilities	CRE	Residential Real Estate	SBL and Other	Total
December 31, 2020	$ 309	$ 198	$211	$ 59	$58	$835
Gross charge-offs	(23)	(67)	(27)	(1)	(8)	(126)
Provision (release)	(119)	34	25	1	11	(48)
Other	(2)	(2)	(3)	1	(1)	(7)
December 31, 2021	$ 165	$ 163	$206	$ 60	$60	$654
Percent of loans to total loans[1]	3 %	18 %	4 %	25 %	50 %	100 %

$ in millions	Corporate	Secured Lending Facilities	CRE	Residential Real Estate	SBL and Other	Total
December 31, 2019	$ 115	$ 101	$75	$ 25	$33	$349
Effect of CECL adoption	(2)	(42)	34	21	(2)	9
Gross charge-offs	(39)	—	(64)	(1)	(1)	(105)
Recoveries	4	—	—	—	4	8
Net (charge-offs) recoveries	(35)	—	(64)	(1)	3	(97)
Provision (release)	224	136	197	14	(13)	558
Other	7	3	(31)	—	37	16
December 31, 2020	$ 309	$ 198	$211	$ 59	$58	$835
Percent of loans to total loans[1]	4 %	19 %	5 %	26 %	46 %	100 %

CRE—Commercial real estate
SBL—Securities-based lending
1. Percent of loans to total loans represents loans held for investment by loan type to total loans held for investment.

Allowance for Credit Losses Rollforward—Lending Commitments

$ in millions	Corporate	Secured Lending Facilities	CRE	Residential Real Estate	SBL and Other	Total
December 31, 2021	$ 356	$ 41	$ 20	$ 1	$ 26	$ 444
Provision (release)	59	10	(5)	3	(3)	64
Other	(4)	—	—	—	—	(4)
December 31, 2022	**$ 411**	**$ 51**	**$ 15**	**$ 4**	**$ 23**	**$ 504**

$ in millions	Corporate	Secured Lending Facilities	CRE	Residential Real Estate	SBL and Other	Total
December 31, 2020	$ 323	$ 38	$ 11	$ 1	$ 23	$ 396
Provision (release)	37	2	10	—	3	52
Other	(4)	1	(1)	—	—	(4)
December 31, 2021	$ 356	$ 41	$ 20	$ 1	$ 26	$ 444

$ in millions	Corporate	Secured Lending Facilities	CRE	Residential Real Estate	SBL and Other	Total
December 31, 2019	$ 201	$ 27	$ 7	$ —	$ 6	$ 241
Effect of CECL adoption	(41)	(11)	1	2	(1)	(50)
Provision (release)	161	22	7	(1)	14	203
Other	2	—	(4)	—	4	2
December 31, 2020	$ 323	$ 38	$ 11	$ 1	$ 23	$ 396

The aggregate allowance for credit losses for loans and lending commitments increased in 2022, reflecting the Provision for credit losses due to portfolio growth and deterioration in macroeconomic outlook. The base scenario used in our ACL models as of December 31, 2022 was generated using a combination of consensus economic forecasts, forward rates, and internally developed and validated models, and assumes weak economic growth over the forecast period. Given the nature of our lending portfolio, the most sensitive model input is U.S. gross domestic product.

See Note 2 for a description of the ACL calculated under the CECL methodology, including credit quality indicators, used for held-for-investment loans beginning in 2020 and for a summary of the differences compared with the Firm's ACL methodology under the prior incurred loss model.

Selected Credit Ratios

	At December 31, 2022	At December 31, 2021
ACL for loans to total HFI loans	**0.4 %**	0.4 %
Nonaccrual HFI loans to total HFI loans[1]	**0.3 %**	0.5 %
ACL for loans to nonaccrual HFI loans	**167.1 %**	73.2 %

1. Nonaccrual HFI loans are loans that are 90 days or more past due.

Employee Loans

$ in millions	At December 31, 2022	At December 31, 2021
Currently employed by the Firm[1]	**$ 4,023**	$ 3,613
No longer employed by the Firm[2]	**97**	113
Employee loans	**$ 4,120**	$ 3,726
ACL	**(139)**	(153)
Employee loans, net of ACL	**$ 3,981**	$ 3,573
Remaining repayment term, weighted average in years	**5.8**	5.7

1. These loans are predominantly current.
2. These loans are predominantly past due for a period of 90 days or more.

Employee loans are granted in conjunction with a program established primarily to recruit certain Wealth Management representatives, are full recourse and generally require periodic repayments, and are due in full upon termination of employment with the Firm. These loans are recorded in Customer and other receivables in the balance sheet. See Note 2 for a description of the CECL allowance methodology, including credit quality indicators, for employee loans.

11. Goodwill and Intangible Assets

Goodwill Rollforward

$ in millions	IS	WM	IM	Total
At December 31, 2020[1]	$ 476	$ 10,278	$ 881	$ 11,635
Foreign currency and other	(1)	(68)	(3)	(72)
Acquired[2]	—	115	5,155	5,270
At December 31, 2021[1]	$ 475	$ 10,325	$ 6,033	$ 16,833
Foreign currency	**(39)**	**(7)**	**(12)**	**(58)**
Disposals	**(7)**	**(116)**	**—**	**(123)**
At December 31, 2022[1]	**$ 429**	**$ 10,202**	**$ 6,021**	**$ 16,652**
Accumulated impairments[3]	$ 673	$ —	$ 27	$ 700

1. Balances represent the amount of the Firm's goodwill after accumulated impairments.
2. The Investment Management and Wealth Management business segments' amounts reflect the impact of the Firm's acquisition of Eaton Vance on March 1, 2021.
3. There were no impairments recorded in 2022, 2021 or 2020.

Intangible Assets Rollforward

$ in millions	IS	WM	IM	Total
At December 31, 2020	$ 127	$ 4,809	$ 44	$ 4,980
Acquired[1]	—	134	3,844	3,978
Disposals	—	(36)	—	(36)
Amortization expense	(23)	(495)	(94)	(612)
Other	—	51	(1)	50
At December 31, 2021	$ 104	$ 4,463	$ 3,793	$ 8,360
Acquired	**23**	**41**	**—**	**64**
Disposals	**(75)**	**(106)**	**—**	**(181)**
Amortization expense	**(16)**	**(483)**	**(111)**	**(610)**
Other	**—**	**(4)**	**(11)**	**(15)**
At December 31, 2022	**$ 36**	**$ 3,911**	**$ 3,671**	**$ 7,618**

1. The Investment Management and Wealth Management amounts principally reflect the impact of the Firm's acquisition of Eaton Vance on March 1, 2021, which includes $2.1 billion of non-amortizable intangible assets.

Intangible Assets by Type

	Non-amortizable	Amortizable	
$ in millions	Gross Carrying Amount	Gross Carrying Amount	Accumulated Amortization
At December 31, 2022			
Management contracts	**$ 2,110**	**$ 245**	**$ 51**
Customer relationships	**—**	**8,766**	**4,046**
Tradenames	**—**	**736**	**151**
Other	**—**	**14**	**5**
Total	**$ 2,110**	**$ 9,761**	**$ 4,253**
At December 31, 2021			
Management contracts	2,120	291	95
Customer relationships	—	8,851	3,515
Tradenames	—	737	117
Other	—	180	92
Total	$ 2,120	$ 10,059	$ 3,819

Intangible Assets Estimated Future Amortization Expense

$ in millions	**At December 31, 2022**
2023	**$ 599**
2024	**598**
2025	**449**
2026	**340**
2027	**337**

The Firm's annual goodwill and non-amortizable intangible asset impairment testing as of July 1, 2022 did not indicate any impairment. For more information, see Note 2.

12. Other Assets—Equity Method Investments and Leases

Equity Method Investments

$ in millions	**At December 31, 2022**	At December 31, 2021
Investments	**$ 1,927**	$ 2,214

$ in millions	**2022**	2021	2020
Income (loss)	**$ 39**	$ 104	$ —

Equity method investments, other than investments in certain fund interests, are summarized above and are included in Other assets in the balance sheet with related income or loss included in Other revenues in the income statement. See "Net Asset Value Measurements—Fund Interests" in Note 5 for the carrying value of certain of the Firm's fund interests, which are composed of general and limited partnership interests, as well as any related carried interest.

Japanese Securities Joint Venture

$ in millions	**2022**	2021	2020
Income (loss) from investment in MUMSS	**$ 35**	$ 168	$ 80

The Firm and Mitsubishi UFJ Financial Group, Inc. ("MUFG") formed a joint venture in Japan comprising their respective investment banking and securities businesses by forming two joint venture companies, Mitsubishi UFJ Morgan Stanley Securities Co., Ltd. ("MUMSS") and Morgan Stanley MUFG Securities Co., Ltd. ("MSMS") (collectively, the "Joint Venture"). The Firm owns a 40% economic interest in the Joint Venture, and MUFG owns the other 60%.

The Firm's 40% voting interest in MUMSS is accounted for under the equity method within the Institutional Securities business segment and is included in the equity method investment balances above. The Firm consolidates MSMS into the Institutional Securities business segment, based on its 51% voting interest.

The Firm engages in transactions in the ordinary course of business with MUFG and its affiliates; for example, investment banking, financial advisory, sales and trading, derivatives, investment management, lending, securitization and other financial services transactions. Such transactions are on substantially the same terms as those that would be available to unrelated third parties for comparable transactions.

Leases

The Firm's leases are principally non-cancelable operating real estate leases.

Balance Sheet Amounts Related to Leases

$ in millions	At December 31, 2022	At December 31, 2021
Other assets—ROU assets	$ 4,073	$ 4,268
Other liabilities and accrued expenses—Lease liabilities	4,901	5,157
Weighted average:		
Remaining lease term, in years	8.6	8.9
Discount rate	3.3 %	3.1 %

Lease Liabilities

$ in millions	At December 31, 2022	At December 31, 2021
2022		$ 886
2023	$ 870	834
2024	785	711
2025	673	593
2026	604	527
2027	548	465
Thereafter	2,209	1,922
Total undiscounted cash flows	5,689	5,938
Imputed interest	(788)	(781)
Amount on balance sheet	$ 4,901	$ 5,157
Committed leases not yet commenced	$ 970	$ 480

Lease Costs

$ in millions	2022	2021	2020
Fixed costs	$ 841	$ 852	$ 762
Variable costs[1]	170	187	154
Less: Sublease income	(7)	(6)	(5)
Total lease cost, net	$ 1,004	$ 1,033	$ 911

1. Includes common area maintenance charges and other variable costs not included in the measurement of ROU assets and lease liabilities.

Cash Flows Statement Supplemental Information

$ in millions	2022	2021	2020
Cash outflows—Lease liabilities	$ 881	$ 879	$ 765
Non-cash—ROU assets recorded for new and modified leases	544	578	991

Occupancy lease agreements, in addition to base rentals, generally provide for rent and operating expense escalations resulting from increased assessments for real estate taxes and other charges.

13. Deposits

Deposits

$ in millions	At December 31, 2022	At December 31, 2021
Savings and demand deposits	$ 319,948	$ 332,747
Time deposits	36,698	14,827
Total	$ 356,646	$ 347,574
Deposits subject to FDIC insurance	$ 260,420	$ 230,894
Deposits not subject to FDIC insurance	$ 96,226	$ 116,680

Time Deposit Maturities

$ in millions	At December 31, 2022
2023	$ 22,871
2024	8,739
2025	2,432
2026	748
2027	1,343
Thereafter	565
Total	$ 36,698

Uninsured Non-U.S. Time Deposit Maturities

$ in millions	At December 31, 2022
Less than 3 months	$ 1,622
3 - 6 months	132
6 - 12 months	31
Over 12 months	186
Total	$ 1,971

Deposits in U.S. Bank Subsidiaries from non-U.S. Depositors

$ in millions	At December 31, 2022	At December 31, 2021
Deposits in U.S. bank subsidiaries from non-U.S. depositors	$ 1,220	$ 963

14. Borrowings and Other Secured Financings

Maturities and Terms of Borrowings

	Parent Company		Subsidiaries			
$ in millions	Fixed Rate[1]	Variable Rate[2]	Fixed Rate[1]	Variable Rate[2]	At December 31, 2022	At December 31, 2021
Original maturities of one year or less:						
Next 12 months	$ —	$ —	$ 343	$ 3,848	$ 4,191	$ 5,764
Original maturities greater than one year:						
2022						$ 14,197
2023	$ 10,541	$ 466	$ 421	$ 7,482	$ 18,910	23,786
2024	17,611	2,007	662	9,562	29,842	29,166
2025	18,499	2,963	1,435	7,338	30,235	25,561
2026	22,261	1,361	582	4,794	28,998	24,026
2027	16,724	348	1,319	5,170	23,561	21,647
Thereafter	74,048	2,807	7,639	17,827	102,321	88,980
Total	$159,684	$ 9,952	$12,058	$52,173	$ 233,867	$ 227,363
Total	$159,684	$ 9,952	$12,401	$56,021	$ 238,058	$ 233,127
Weighted average coupon at period end[3]	3.1 %	5.4 %	3.4 %	N/M	3.2 %	2.7 %

1. Fixed rate borrowings include instruments with step-up, step-down and zero coupon features.
2. Variable rate borrowings include those that bear interest based on a variety of indices, including LIBOR, federal funds rates and SOFR, in addition to certain notes carried at fair value with various payment provisions, including notes linked to the performance of a specific index, a basket of stocks, a specific equity security, a commodity, a credit exposure or basket of credit exposures.
3. Only includes borrowings with original maturities greater than one year. Weighted average coupon is calculated utilizing U.S. and non-U.S. dollar interest rates and excludes financial instruments for which the fair value option was elected. Virtually all of the variable rate notes issued by subsidiaries are carried at fair value so a weighted average coupon is not meaningful.

Borrowings with Original Maturities Greater than One Year

$ in millions	At December 31, 2022	At December 31, 2021
Senior	$ 221,667	$ 213,776
Subordinated	12,200	13,587
Total	$ 233,867	$ 227,363
Weighted average stated maturity, in years	6.7	7.7

Certain senior debt securities are denominated in various non-U.S. dollar currencies and may be structured to provide a return that is linked to equity, credit, commodity or other indices (*e.g.*, the consumer price index). Senior debt also may be structured to be callable by the Firm or extendible at the option of holders of the senior debt securities.

The Firm's Borrowings include notes carried and managed on a fair value basis. These include instruments whose payments and redemption values are linked to the performance of a specific index, a basket of stocks, a specific equity security, a commodity, a credit exposure or basket of credit exposures; and instruments with various interest rate-related features, including step-ups, step-downs and zero coupons. Also included are unsecured contracts which are not classified as OTC derivatives because they fail net investment criteria. To minimize the exposure from such instruments, the Firm has entered into various swap contracts and purchased options that effectively convert the borrowing costs into floating rates. The swaps and purchased options used to economically hedge the embedded features are derivatives and also are carried at fair value. Changes in fair value related to the notes and economic hedges are reported in Trading revenues. See Notes 2 and 6 for further information on borrowings carried at fair value.

Senior Debt Subject to Put Options or Liquidity Obligations

$ in millions	At December 31, 2022	At December 31, 2021
Put options embedded in debt agreements	$ 496	$ 174
Liquidity obligations[1]	$ 2,423	$ 1,622

1. Includes obligations to support secondary market trading.

Subordinated Debt

	2022	2021
Contractual weighted average coupon	4.1 %	4.0 %

Subordinated debt generally is issued to meet the capital requirements of the Firm or its regulated subsidiaries and primarily is U.S. dollar denominated. Maturities of subordinated debt range from 2023 to 2037.

Rates for Borrowings with Original Maturities Greater than One Year

	At December 31,		
	2022	2021	2020
Contractual weighted average coupon[1]	3.2 %	2.7 %	2.9 %
Weighted average coupon after swaps	5.1 %	1.6 %	1.7 %

1. Weighted average coupon was calculated utilizing U.S. and non-U.S. dollar interest rates and excludes financial instruments for which the fair value option was elected.

In general, other than securities inventories and customer balances financed by secured funding sources, the majority of the Firm's assets are financed with a combination of deposits, short-term funding, floating rate long-term debt or fixed rate long-term debt swapped to a floating rate. The Firm uses interest rate swaps to more closely match these borrowings to the duration, holding period and interest rate characteristics of the assets being funded and to manage interest rate risk. These swaps effectively convert certain of the Firm's fixed rate borrowings into floating rate obligations. In addition, for non-U.S. dollar currency borrowings that are not used to fund assets in the same currency, the Firm has entered into currency swaps that effectively convert the borrowings into U.S. dollar obligations.

The Firm's use of swaps for asset and liability management affects its effective average borrowing rate.

Other Secured Financings

$ in millions	At December 31, 2022	At December 31, 2021
Original maturities:		
One year or less	$ 944	$ 4,573
Greater than one year	7,214	5,468
Total	$ 8,158	$ 10,041
Transfers of assets accounted for as secured financings	1,119	1,556

Maturities and Terms of Other Secured Financings[1]

	At December 31, 2022			At December 31, 2021
$ in millions	Fixed Rate	Variable Rate[2]	Total	
Original maturities of one year or less:				
Next 12 months	$ —	$ 501	$ 501	$ 3,754
Original maturities greater than one year:				
2022				$ 2,286
2023	$ —	$ 5,200	$ 5,200	1,804
2024	—	343	343	233
2025	—	131	131	39
2026	2	—	2	—
2027	—	—	—	—
Thereafter	9	853	862	369
Total	$ 11	$ 6,527	$ 6,538	$ 4,731
Weighted average coupon at period-end[3]	N/M	4.9 %	4.9 %	0.7 %

1. Excludes transfers of assets accounted for as secured financings. See subsequent table.
2. Variable rate other secured financings bear interest based on a variety of indices, including LIBOR and federal funds rates. Amounts include notes carried at fair value with various payment provisions, including notes linked to equity, credit, commodity or other indices.
3. Includes only other secured financings with original maturities greater than one year. Weighted average coupon is calculated utilizing U.S. and non-U.S. dollar interest rates and excludes other secured financings that are linked to non-interest indices and for which the fair value option was elected.

Other secured financings include the liabilities related to collateralized notes, transfers of financial assets that are accounted for as financings rather than sales and consolidated VIEs where the Firm is deemed to be the primary beneficiary. These liabilities are generally payable from the cash flows of the related assets accounted for as Trading assets. See Note 16

for further information on other secured financings related to VIEs and securitization activities.

Maturities of Transfers of Assets Accounted for as Secured Financings[1]

$ in millions	At December 31, 2022	At December 31, 2021
2022		$ 846
2023	$ 987	586
2024	4	—
2025	60	7
2026	35	34
2027	21	14
Thereafter	12	69
Total	$ 1,119	$ 1,556

1. Excludes Securities sold under agreements to repurchase and Securities loaned.

For transfers of assets that fail to meet accounting criteria for a sale, the Firm continues to record the assets and recognizes the associated liabilities in the balance sheet.

15. Commitments, Guarantees and Contingencies

Commitments

	Years to Maturity at December 31, 2022				
$ in millions	Less than 1	1-3	3-5	Over 5	Total
Lending:					
Corporate	$ 14,989	$ 26,942	$ 57,722	$ 1,706	$101,359
Secured lending facilities	7,376	5,280	2,485	1,095	16,236
Commercial and Residential real estate	129	247	18	325	719
Securities-based lending and Other	12,586	5,234	439	387	18,646
Forward-starting secured financing receivables[1]	60,852	—	—	—	60,852
Central counterparty	300	—	—	5,070	5,370
Underwriting	350	—	—	—	350
Investment activities	1,292	208	91	361	1,952
Letters of credit and other financial guarantees	87	65	—	17	169
Total	$ 97,961	$ 37,976	$ 60,755	$ 8,961	$205,653
Lending commitments participated to third parties					$ 8,060

1. Forward-starting secured financing receivables are generally settled within three business days.

Since commitments associated with these instruments may expire unused, the amounts shown do not necessarily reflect the actual future cash funding requirements.

Types of Commitments

Lending Commitments. Lending commitments primarily represent the notional amount of legally binding obligations to provide funding to clients for different types of loan transactions. For syndications that are led by the Firm, the lending commitments accepted by the borrower but not yet closed are net of the amounts agreed to by counterparties that will participate in the syndication. For syndications that the Firm participates in and does not lead, lending commitments accepted by the borrower but not yet closed include only the amount that the Firm expects it will be allocated from the lead syndicate bank. Due to the nature of the Firm's obligations under the commitments, these amounts include certain commitments participated to third parties.

Forward-Starting Secured Financing Receivables. This amount includes securities purchased under agreements to resell and securities borrowed that the Firm has entered into prior to the balance sheet date that will settle after the balance sheet date. These transactions are primarily secured by collateral from U.S. government agency securities and other sovereign government obligations when they are funded.

Central Counterparty. These commitments relate to the Firm's membership in certain clearinghouses and are contingent upon the default of a clearinghouse member or other stress events.

Underwriting Commitments. The Firm provides underwriting commitments in connection with its capital raising sources to a diverse group of corporate and other institutional clients.

Investment Activities. The Firm sponsors several non-consolidated investment management funds for third-party investors where it typically acts as general partner of, and investment advisor to, these funds and typically commits to invest a minority of the capital of such funds, with subscribing third-party investors contributing the majority. The Firm has contractual capital commitments, guarantees and counterparty arrangements with respect to these investment management funds.

Letters of Credit and Other Financial Guarantees. The Firm has outstanding letters of credit and other financial guarantees issued by third-party banks to certain of the Firm's counterparties. The Firm is contingently liable for these letters of credit and other financial guarantees, which are primarily used to provide collateral for securities and commodities traded and to satisfy various margin requirements in lieu of depositing cash or securities with these counterparties.

Guarantees

	At December 31, 2022				
	Maximum Potential Payout/Notional of Obligations by Years to Maturity				Carrying Amount Asset (Liability)
$ in millions	Less than 1	1-3	3-5	Over 5	
Non-credit derivatives[1]	**1,112,671**	**923,893**	**341,579**	**789,300**	**(79,849)**
Standby letters of credit and other financial guarantees issued[2]	**1,470**	**736**	**1,249**	**2,663**	**2**
Market value guarantees	**2**	**—**	**—**	**—**	**—**
Liquidity facilities	**3,200**	**—**	**—**	**—**	**—**
Whole loan sales guarantees	**—**	**24**	**63**	**23,079**	**—**
Securitization representations and warranties[3]	**—**	**—**	**—**	**78,966**	**(3)**
General partner guarantees	**357**	**30**	**143**	**35**	**(88)**
Client clearing guarantees	**40**	**—**	**—**	**—**	**—**

1. The carrying amounts of derivative contracts that meet the accounting definition of a guarantee are shown on a gross basis. For further information on derivative contracts, see Note 7.
2. These amounts include certain issued standby letters of credit participated to third parties, totaling $0.6 billion of notional and collateral/recourse, due to the nature of the Firm's obligations under these arrangements. As of December 31, 2022, the carrying amount of standby letters of credit and other financial guarantees issued includes an allowance for credit losses of $79 million.
3. Related to commercial and residential mortgage securitizations.

Types of Guarantees

Non-Credit Derivatives. Certain derivative contracts meet the accounting definition of a guarantee, including certain written options, contingent forward contracts and CDS (see Note 7 regarding credit derivatives in which the Firm has sold credit protection to the counterparty which are excluded from the previous table). For non-credit derivative contracts that meet the accounting definition of a guarantee the notional amount is used as the maximum potential payout for certain derivative contracts, such as written interest rate caps and written foreign currency options. The Firm evaluates collateral requirements for all derivatives, including derivatives that do not meet the accounting definition of a guarantee. For the effects of cash collateral and counterparty netting, see Note 7.

In certain situations, collateral may be held by the Firm for those contracts that meet the definition of a guarantee. Generally, the Firm sets collateral requirements by counterparty so that the collateral covers various transactions and products and is not allocated specifically to individual contracts. Also, the Firm may recover amounts related to the underlying asset delivered to the Firm under the derivative contract.

Standby Letters of Credit and Other Financial Guarantees Issued. In connection with its corporate lending business and other corporate activities, the Firm provides standby letters of credit and other financial guarantees to counterparties. Such arrangements represent obligations to make payments to third parties if the counterparty fails to fulfill its obligation under a borrowing arrangement or other contractual obligation. A majority of the Firm's standby letters of credit are provided on behalf of counterparties that are investment grade. If the counterparty fails to fulfill its contractual obligation, the Firm has access to collateral or recourse that would approximate its obligation.

Market Value Guarantees. Market value guarantees are issued to guarantee timely payment of a specified return to investors in certain affordable housing tax credit funds. These guarantees are designed to return an investor's contribution to a fund and the investor's share of tax losses and tax credits expected to be generated by a fund.

Liquidity Facilities. The Firm has entered into liquidity facilities with SPEs and other counterparties, whereby the Firm is required to make certain payments if losses or defaults occur. Primarily, the Firm acts as liquidity provider to municipal bond securitization SPEs and for standalone municipal bonds in which the holders of beneficial interests issued by these SPEs or the holders of the individual bonds, respectively, have the right to tender their interests for purchase by the Firm on specified dates at a specified price. The Firm often may have recourse to the underlying assets held by the SPEs in the event payments are required under such liquidity facilities, as well as make-whole or recourse provisions with the trust sponsors. The recourse amount often exceeds the maximum potential payout amount of the guarantee. Substantially all of the underlying assets in the SPEs are investment grade. Liquidity facilities provided to municipal tender option bond trusts are classified as derivatives.

Whole Loan Sales Guarantees. The Firm has provided, or otherwise agreed to be responsible for, representations and warranties regarding certain whole loan sales. Under certain circumstances, the Firm may be required to repurchase such assets or make other payments related to such assets if such representations and warranties are breached. The Firm's maximum potential payout related to such representations and warranties is equal to the current UPB of such loans. Since the Firm no longer services these loans, it has no information on the current UPB of those loans, and, accordingly, the amount included in the previous table represents the UPB at the time of the whole loan sale or at the time when the Firm last serviced any of those loans. The current UPB balances could be substantially lower than the maximum potential payout amount included in the previous table. The related liability primarily relates to sales of loans to the federal mortgage agencies.

Securitization Representations and Warranties. As part of the Firm's Institutional Securities business segment's securitizations and related activities, the Firm has provided, or otherwise agreed to be responsible for, representations and warranties regarding certain assets transferred in securitization transactions sponsored by the Firm. The extent and nature of the representations and warranties, if any, vary among different securitizations. Under certain circumstances, the Firm may be required to repurchase certain assets or make other payments related to such assets if such representations and warranties are breached. The maximum potential amount of future payments the Firm could be required to make would be equal to the current outstanding balances of, or losses associated with, the assets subject to breaches of such representations and warranties. The amount included in the

previous table for the maximum potential payout includes the current UPB or historical losses where known and the UPB at the time of sale when the current UPB is not known.

General Partner Guarantees. As a general partner in certain investment management funds, the Firm receives certain distributions from the partnerships when the return exceeds specified performance targets according to the provisions of the partnership agreements. The Firm may be required to return all or a portion of such distributions to the limited partners in the event the limited partners do not achieve a certain return as specified in the various partnership agreements, subject to certain limitations.

Client Clearing Guarantees. The Firm is a sponsoring member of the Government Securities Division of the FICC's Sponsored Clearing Model. Clients of the Firm, as sponsored members, can transact in overnight and term securities repurchase and resale agreements, which are cleared through the FICC. As sponsoring member, the Firm guarantees to the FICC the prompt and full payment and performance of its clients' obligations. In 2020, the FICC's sponsored clearing model was updated such that the Firm could be responsible for liquidation of a sponsored member's account and guarantees any resulting loss to the FICC in the event the sponsored member fails to fully pay any net liquidation amount due from the sponsored member to the FICC. Accordingly, the Firm's maximum potential payout amount reflects the total of the estimated net liquidation amounts for sponsored member accounts. The Firm minimizes credit exposure under this guarantee by obtaining a security interest in its sponsored member clients' collateral and their contractual rights under sponsored member transactions. Therefore, the Firm's exposure is estimated to be an amount substantially lower than the maximum potential payout amount. The collateral amount in which the Firm has a security interest is approximately equal to the maximum potential payout amount of the guarantee.

Other Guarantees and Indemnities

In the normal course of business, the Firm provides guarantees and indemnifications in a variety of transactions. These provisions generally are standard contractual terms. Certain of these guarantees and indemnifications are described below:

- *Indemnities*. The Firm provides standard indemnities to counterparties for certain contingent exposures and taxes, including U.S. and foreign withholding taxes, on interest and other payments made on derivatives, securities and stock lending transactions, certain annuity products and other financial arrangements. These indemnity payments could be required based on a change in the tax laws, a change in interpretation of applicable tax rulings or a change in factual circumstances. Certain contracts contain provisions that enable the Firm to terminate the agreement upon the occurrence of such events. The Firm may also provide indemnities when it sells a business or assets to a third-party, pursuant to which it indemnifies the third-party for losses incurred on assets acquired or liabilities assumed or due to actions taken by the Firm prior to the sale of the business or assets. The Firm expects the risk of loss associated with indemnities related to the sale of businesses or assets to be remote. The maximum potential amount of future payments that the Firm could be required to make under these indemnifications cannot be estimated.

- *Exchange/Clearinghouse Member Guarantees.* The Firm is a member of various exchanges and clearinghouses that trade and clear securities and/or derivative contracts. Associated with its membership, the Firm may be required to pay a certain amount as determined by the exchange or the clearinghouse in case of a default of any of its members or pay a proportionate share of the financial obligations of another member that may default on its obligations to the exchange or the clearinghouse. While the rules governing different exchange or clearinghouse memberships and the forms of these guarantees may vary, in general the Firm's obligations under these rules would arise only if the exchange or clearinghouse had previously exhausted its resources.

  In addition, some clearinghouse rules require members to assume a proportionate share of losses resulting from the clearinghouse's investment of guarantee fund contributions and initial margin and of other losses unrelated to the default of a clearing member, if such losses exceed the specified resources allocated for such purpose by the clearinghouse.

  The maximum potential payout under these rules cannot be estimated. The Firm has not recorded any contingent liability in its financial statements for these agreements and believes that any potential requirement to make payments under these agreements is remote.

- *Merger and Acquisition Guarantees.* The Firm may, from time to time, in its role as investment banking advisor be required to provide guarantees in connection with certain European merger and acquisition transactions. If required by the regulating authorities, the Firm provides a guarantee that the acquirer in the transaction has or will have sufficient funds to complete the transaction and would then be required to make the acquisition payments in the event the acquirer's funds are insufficient at the completion date of the transaction. These arrangements generally cover the time frame from the transaction offer date to its closing date and, therefore, are generally short term in nature. The Firm believes the likelihood of any payment by the Firm under these arrangements is remote given the level of its due diligence in its role as investment banking advisor.

In addition, in the ordinary course of business, the Firm guarantees the debt and/or certain trading obligations (including obligations associated with derivatives, foreign exchange contracts and the settlement of physical commodities) of certain subsidiaries. These guarantees

generally are entity or product specific and are required by investors or trading counterparties. The activities of the Firm's subsidiaries covered by these guarantees (including any related debt or trading obligations) are included in the financial statements.

Finance Subsidiary

The Parent Company fully and unconditionally guarantees the securities issued by Morgan Stanley Finance LLC, a wholly owned finance subsidiary. No other subsidiary of the Parent Company guarantees these securities.

Contingencies

Legal

In addition to the matter described below, in the normal course of business, the Firm has been named, from time to time, as a defendant in various legal actions, including arbitrations, class actions and other litigation, arising in connection with its activities as a global diversified financial services institution. Certain of the actual or threatened legal actions include claims for substantial compensatory and/or punitive damages or claims for indeterminate amounts of damages. In some cases, the entities that would otherwise be the primary defendants in such cases are bankrupt or are in financial distress. These actions have included, but are not limited to, antitrust claims, claims under various false claims act statutes, and matters arising from our sales and trading businesses, and our activities in the capital markets.

The Firm is also involved, from time to time, in other reviews, investigations and proceedings (both formal and informal) by governmental and self-regulatory agencies regarding the Firm's business, and involving, among other matters, sales, trading, financing, prime brokerage, market-making activities, investment banking advisory services, capital market activities, financial products or offerings sponsored, underwritten or sold by the Firm, wealth and investment management services, and accounting and operational matters, certain of which may result in adverse judgments, settlements, fines, penalties, injunctions, limitations on our ability to conduct certain business, or other relief.

While the Firm has identified below any individual proceedings or investigations where the Firm believes a material loss to be reasonably possible and reasonably estimable, there can be no assurance that material losses will not be incurred from claims that have not yet been asserted or those where potential losses have not yet been determined to be probable or possible and reasonably estimable.

The Firm contests liability and/or the amount of damages as appropriate in each pending matter. Where available information indicates that it is probable a liability had been incurred at the date of the financial statements and the Firm can reasonably estimate the amount of that loss, the Firm accrues the estimated loss by a charge to income.

$ in millions	2022	2021	2020
Legal expenses	$ 443	$ 157	$ 336

The Firm's legal expenses can, and may in the future, fluctuate from period to period, given the current environment regarding government investigations and private litigation affecting global financial services firms, including the Firm.

In many proceedings and investigations, however, it is inherently difficult to determine whether any loss is probable or even possible or to estimate the amount of any loss. In addition, even where a loss is possible or an exposure to loss exists in excess of the liability already accrued with respect to a previously recognized loss contingency, it is not always possible to reasonably estimate the size of the possible loss or range of loss, particularly for proceedings and investigations where the factual record is being developed or contested or where plaintiffs or government entities seek substantial or indeterminate damages, restitution, disgorgement or penalties. Numerous issues may need to be resolved before a loss or additional loss, or range of loss or additional range of loss, can be reasonably estimated for a proceeding or investigation, including through potentially lengthy discovery and determination of important factual matters, determination of issues related to class certification and the calculation of damages or other relief, and consideration of novel or unsettled legal questions relevant to the proceedings or investigations in question.

For certain other legal proceedings and investigations, the Firm can estimate reasonably possible losses, additional losses, ranges of loss or ranges of additional loss in excess of amounts accrued but does not believe, based on current knowledge and after consultation with counsel, that such losses could have a material adverse effect on the Firm's financial statements as a whole, other than the matter referred to in the following paragraph.

Tax

In matters styled *Case number 15/3637* and *Case number 15/4353*, the Dutch Tax Authority ("Dutch Authority") is challenging in the Dutch courts the prior set-off by the Firm of approximately €124 million (approximately $133 million) plus accrued interest of withholding tax credits against the Firm's corporation tax liabilities for the tax years 2007 to 2012. The Dutch Authority alleges that the Firm was not entitled to receive the withholding tax credits on the basis, inter alia, that a Firm subsidiary did not hold legal title to certain securities subject to withholding tax on the relevant dates. The Dutch Authority has also alleged that the Firm failed to provide certain information to the Dutch Authority and to keep adequate books and records. On April 26, 2018, the District Court in Amsterdam issued a decision dismissing the Dutch Authority's claims with respect to certain of the tax years in dispute. On May 12, 2020, the Court of Appeal in Amsterdam granted the Dutch Authority's appeal in matters re-styled *Case number 18/00318* and *Case number 18/00319*. On June 22, 2020, the Firm filed an appeal against the

decision of the Court of Appeal in Amsterdam before the Dutch High Court. On January 29, 2021, the Advocate General of the Dutch High Court issued an advisory opinion on the Firm's appeal, which rejected the Firm's principal grounds of appeal. On February 11, 2021, the Firm and the Dutch Authority each responded to this opinion. On June 22, 2021, Dutch criminal authorities sought various documents in connection with an investigation of the Firm related to the civil claims asserted by the Dutch Authority concerning the accuracy of the Firm subsidiary's tax returns and the maintenance of its books and records for 2007 to 2012.

16. Variable Interest Entities and Securitization Activities

Overview

The Firm is involved with various SPEs in the normal course of business. In most cases, these entities are deemed to be VIEs.

The Firm's variable interests in VIEs include debt and equity interests, commitments, guarantees, derivative instruments and certain fees. The Firm's involvement with VIEs arises primarily from:

- Interests purchased in connection with market-making activities, securities held in its Investment securities portfolio and retained interests held as a result of securitization activities, including re-securitization transactions.
- Guarantees issued and residual interests retained in connection with municipal bond securitizations.
- Loans made to and investments in VIEs that hold debt, equity, real estate or other assets.
- Derivatives entered into with VIEs.
- Structuring of CLNs or other asset-repackaging notes designed to meet the investment objectives of clients.
- Other structured transactions designed to provide tax-efficient yields to the Firm or its clients.

The Firm determines whether it is the primary beneficiary of a VIE upon its initial involvement with the VIE and reassesses whether it is the primary beneficiary on an ongoing basis as long as it has any continuing involvement with the VIE. This determination is based upon an analysis of the design of the VIE, including the VIE's structure and activities, the power to make significant economic decisions held by the Firm and by other parties, and the variable interests owned by the Firm and other parties.

The power to make the most significant economic decisions may take a number of different forms in different types of VIEs. The Firm considers servicing or collateral management decisions as representing the power to make the most significant economic decisions in transactions such as securitizations or CDOs. As a result, the Firm does not consolidate securitizations or CDOs for which it does not act as the servicer or collateral manager unless it holds certain other rights to replace the servicer or collateral manager or to require the liquidation of the entity. If the Firm serves as servicer or collateral manager, or has certain other rights described in the previous sentence, the Firm analyzes the interests in the VIE that it holds and consolidates only those VIEs for which it holds a potentially significant interest in the VIE.

For many transactions, such as re-securitization transactions, CLNs and other asset-repackaging notes, there are no significant economic decisions made on an ongoing basis. In these cases, the Firm focuses its analysis on decisions made prior to the initial closing of the transaction and at the termination of the transaction. The Firm concluded in most of these transactions that decisions made prior to the initial closing were shared between the Firm and the initial investors based upon the nature of the assets, including whether the assets were issued in a transaction sponsored by the Firm and the extent of the information available to the Firm and to investors, the number, nature and involvement of investors, other rights held by the Firm and investors, the standardization of the legal documentation and the level of continuing involvement by the Firm, including the amount and type of interests owned by the Firm and by other investors. The Firm focused its control decision on any right held by the Firm or investors related to the termination of the VIE. Most re-securitization transactions, CLNs and other asset-repackaging notes have no such termination rights.

Consolidated VIE Assets and Liabilities by Type of Activity

	At December 31, 2022		At December 31, 2021	
$ in millions	VIE Assets	VIE Liabilities	VIE Assets	VIE Liabilities
MABS[1]	$ 1,153	$ 520	$ 1,177	$ 409
Investment vehicles[2]	638	272	717	294
Operating entities	1	—	508	39
Other	889	521	510	286
Total	$ 2,681	$ 1,313	$ 2,912	$ 1,028

1. Amounts include transactions backed by residential mortgage loans, commercial mortgage loans and other types of assets, including consumer or commercial assets and may be in loan or security form. The value of assets is determined based on the fair value of the liabilities and the interests owned by the Firm in such VIEs as the fair values for the liabilities and interests owned are more observable.
2. Amounts include investment funds and CLOs.

Consolidated VIE Assets and Liabilities by Balance Sheet Caption

$ in millions	At December 31, 2022	At December 31, 2021
Assets		
Cash and cash equivalents	$ 142	$ 341
Trading assets at fair value	2,066	1,965
Investment securities	255	37
Securities purchased under agreements to resell	200	200
Customer and other receivables	16	31
Intangible assets	—	85
Other assets	2	253
Total	$ 2,681	$ 2,912
Liabilities		
Other secured financings	$ 1,185	$ 767
Other liabilities and accrued expenses	124	261
Borrowings	4	—
Total	$ 1,313	$ 1,028
Noncontrolling interests	$ 71	$ 115

Consolidated VIE assets and liabilities are presented in the previous tables after intercompany eliminations. Generally, most assets owned by consolidated VIEs cannot be removed unilaterally by the Firm and are not available to the Firm while the related liabilities issued by consolidated VIEs are non-recourse to the Firm. However, in certain consolidated VIEs, the Firm either has the unilateral right to remove assets or provides additional recourse through derivatives such as total return swaps, guarantees or other forms of involvement.

In general, the Firm's exposure to loss in consolidated VIEs is limited to losses that would be absorbed on the VIE net assets recognized in its financial statements, net of amounts absorbed by third-party variable interest holders.

Non-consolidated VIEs

	At December 31, 2022				
$ in millions	MABS[1]	CDO	MTOB	OSF	Other[2]
VIE assets (UPB)	$123,601	$3,162	$4,632	$2,403	$ 50,178
Maximum exposure to loss[3]					
Debt and equity interests	$ 13,104	$ 274	$ —	$1,694	$ 11,596
Derivative and other contracts	—	—	3,200	—	5,211
Commitments, guarantees and other	674	—	—	—	1,410
Total	$ 13,778	$ 274	$3,200	$1,694	$ 18,217
Carrying value of variable interests—Assets					
Debt and equity interests	$ 13,104	$ 274	$ —	$1,577	$ 11,596
Derivative and other contracts	—	—	3	—	1,564
Total	$ 13,104	$ 274	$ 3	$1,577	$ 13,160
Additional VIE assets owned[4]					$ 13,708
Carrying value of variable interests—Liabilities					
Derivative and other contracts	$ —	$ —	$ 3	$ —	$ 281

	At December 31, 2021				
$ in millions	MABS[1]	CDO	MTOB	OSF	Other[2]
VIE assets (UPB)	$146,071	$ 667	$6,089	$2,086	$ 52,111
Maximum exposure to loss[3]					
Debt and equity interests	$ 18,062	$ 129	$ —	$1,459	$ 10,339
Derivative and other contracts	—	—	4,100	—	5,599
Commitments, guarantees and other	771	—	—	—	1,005
Total	$ 18,833	$ 129	$4,100	$1,459	$ 16,943
Carrying value of variable interests—Assets					
Debt and equity interests	$ 18,062	$ 129	$ —	$1,459	$ 10,339
Derivative and other contracts	—	—	5	—	2,006
Total	$ 18,062	$ 129	$ 5	$1,459	$ 12,345
Additional VIE assets owned[4]					$ 15,392
Carrying value of variable interests—Liabilities					
Derivative and other contracts	$ —	$ —	$ —	$ —	$ 362

MTOB—Municipal tender option bonds
1. Amounts include transactions backed by residential mortgage loans, commercial mortgage loans and other types of assets, including consumer or commercial assets, and may be in loan or security form.
2. Other primarily includes exposures to commercial real estate property and investment funds.
3. Where notional amounts are utilized in quantifying the maximum exposure related to derivatives, such amounts do not reflect changes in fair value recorded by the Firm.
4. Additional VIE assets owned represents the carrying value of total exposure to non-consolidated VIEs for which the maximum exposure to loss is less than specific thresholds, primarily interests issued by securitization SPEs. The Firm's maximum exposure to loss generally equals the fair value of the assets owned. These assets are primarily included in Trading assets and Investment securities and are measured at fair value (see Note 5). The Firm does not provide additional support in these transactions through contractual facilities, guarantees or similar derivatives.

The previous tables include VIEs sponsored by unrelated parties, as well as VIEs sponsored by the Firm; examples of the Firm's involvement with these VIEs include its secondary market-making activities and the securities held in its Investment securities portfolio (see Note 8).

The Firm's maximum exposure to loss is dependent on the nature of the Firm's variable interest in the VIE and is limited to the notional amounts of certain liquidity facilities and other credit support, total return swaps and written put options, as well as the fair value of certain other derivatives and investments the Firm has made in the VIE.

The Firm's maximum exposure to loss in the previous tables does not include the offsetting benefit of hedges or any reductions associated with the amount of collateral held as

part of a transaction with the VIE or any party to the VIE directly against a specific exposure to loss.

Liabilities issued by VIEs generally are non-recourse to the Firm.

Detail of Mortgage- and Asset-Backed Securitization Assets

	At December 31, 2022		At December 31, 2021	
$ in millions	UPB	Debt and Equity Interests	UPB	Debt and Equity Interests
Residential mortgages	$ 20,428	$ 2,570	$ 15,216	$ 2,182
Commercial mortgages	67,540	4,236	68,503	4,092
U.S. agency collateralized mortgage obligations	32,567	4,729	57,972	9,835
Other consumer or commercial loans	3,066	1,569	4,380	1,953
Total	$ 123,601	$ 13,104	$ 146,071	$ 18,062

Securitization Activities

In a securitization transaction, the Firm transfers assets (generally commercial or residential mortgage loans or securities) to an SPE, sells to investors most of the beneficial interests, such as notes or certificates, issued by the SPE, and, in many cases, retains other beneficial interests. The purchase of the transferred assets by the SPE is financed through the sale of these interests.

In many securitization transactions involving commercial mortgage loans, the Firm transfers a portion of the assets to the SPE with unrelated parties transferring the remaining assets. In addition, mainly in securitization transactions involving residential mortgage loans, the Firm may also enter into derivative transactions, primarily interest rate swaps or interest rate caps, with the SPE.

Although not obligated, the Firm generally makes a market in the securities issued by SPEs in securitization transactions. As a market maker, the Firm offers to buy these securities from, and sell these securities to, investors. Securities purchased through these market-making activities are not considered to be retained interests; these beneficial interests generally are included in Trading assets—Corporate and other debt and are measured at fair value.

The Firm enters into derivatives, generally interest rate swaps and interest rate caps, with a senior payment priority in many securitization transactions. The risks associated with these and similar derivatives with SPEs are essentially the same as similar derivatives with non-SPE counterparties and are managed as part of the Firm’s overall exposure. See Note 7 for further information on derivative instruments and hedging activities.

Investment Securities

The Firm holds securities issued by VIEs within the Investment securities portfolio. These securities are composed of those related to transactions sponsored by the federal mortgage agencies and predominantly the most senior securities issued by VIEs backed by student loans and commercial mortgage loans. Transactions sponsored by the federal mortgage agencies include an explicit or implicit guarantee provided by the U.S. government. Additionally, the Firm holds certain commercial mortgage-backed securities issued by VIEs retained as a result of the Firm's securitization activities. See Note 8 for further information on the Investment securities portfolio.

Municipal Tender Option Bond Trusts

In a municipal tender option bond trust transaction, the client transfers a municipal bond to a trust. The trust issues short-term securities that the Firm, as the remarketing agent, sells to investors. The client generally retains a residual interest. The short-term securities are supported by a liquidity facility pursuant to which the investors may put their short-term interests. In most programs, a third-party provider will provide such liquidity facility; in some programs, the Firm provides this liquidity facility.

The Firm may, in lieu of purchasing short-term securities for remarketing, decide to extend a temporary loan to the trust. The client can generally terminate the transaction at any time. The liquidity provider can generally terminate the transaction upon the occurrence of certain events. When the transaction is terminated, the municipal bond is generally sold or returned to the client. Any losses suffered by the liquidity provider upon the sale of the bond are the responsibility of the client. This obligation is generally collateralized. Liquidity facilities provided to municipal tender option bond trusts are classified as derivatives. The Firm consolidates any municipal tender option bond trusts in which it holds the residual interest.

Credit Protection Purchased through Credit-Linked Notes

CLN transactions are designed to provide investors with exposure to certain credit risk on referenced assets. In these transactions, the Firm transfers assets (generally high-quality securities or money market investments) to an SPE, enters into a derivative transaction in which the SPE sells protection on an unrelated referenced asset or group of assets, through a credit derivative, and sells the securities issued by the SPE to investors. In some transactions, the Firm may also enter into interest rate or currency swaps with the SPE. Depending on the structure, the assets and liabilities of the SPE may be consolidated and recognized in the Firm’s balance sheet or accounted for as a sale of assets.

Upon the occurrence of a credit event related to the referenced asset, the SPE will deliver securities collateral as payment to the Firm, which exposes the Firm to changes in the collateral’s value.

Derivative payments by the SPE are collateralized. The risks associated with these and similar derivatives with SPEs are essentially the same as those with non-SPE counterparties and are managed as part of the Firm’s overall exposure.

Other Structured Financings

The Firm invests in interests issued by entities that develop and own low-income communities (including low-income housing projects) and entities that construct and own facilities that will generate energy from renewable resources. The interests entitle the Firm to a share of tax credits and tax losses generated by these projects. In addition, the Firm has issued guarantees to investors in certain low-income housing funds. The guarantees are designed to return an investor's contribution to a fund and the investor's share of tax losses and tax credits expected to be generated by the fund. The Firm is also involved with entities designed to provide tax-efficient yields to the Firm or its clients.

Collateralized Loan and Debt Obligations

CLOs and CDOs are SPEs that purchase a pool of assets consisting of corporate loans, corporate bonds, ABS or synthetic exposures on similar assets through derivatives and issue multiple tranches of debt and equity securities to investors. The Firm underwrites the securities issued in certain CLO transactions on behalf of unaffiliated sponsors and provides advisory services to these unaffiliated sponsors. The Firm sells corporate loans to many of these SPEs, in some cases representing a significant portion of the total assets purchased. Although not obligated, the Firm generally makes a market in the securities issued by SPEs in these transactions and may retain unsold securities. These beneficial interests are included in Trading assets and are measured at fair value.

Equity-Linked Notes

ELN transactions are designed to provide investors with exposure to certain risks related to the specific equity security, equity index or other index. In an ELN transaction, the Firm typically transfers to an SPE either a note issued by the Firm, the payments on which are linked to the performance of a specific equity security, equity index or other index, or debt securities issued by other companies and a derivative contract, the terms of which will relate to the performance of a specific equity security, equity index or other index. These ELN transactions with SPEs were not consolidated at December 31, 2022 or December 31, 2021.

Transferred Assets with Continuing Involvement

	At December 31, 2022			
$ in millions	RML	CML	U.S. Agency CMO	CLN and Other[1]
SPE assets (UPB)[2, 3]	**$ 3,732**	**$ 73,069**	**$ 6,448**	**$ 10,928**
Retained interests				
Investment grade	**$ 137**	**$ 927**	**$ 367**	**$ —**
Non-investment grade	**26**	**465**	**11**	**44**
Total	**$ 163**	**$ 1,392**	**$ 378**	**$ 44**
Interests purchased in the secondary market[3]				
Investment grade	**$ 82**	**$ 51**	**$ 10**	**$ —**
Non-investment grade	**35**	**23**	**—**	**—**
Total	**$ 117**	**$ 74**	**$ 10**	**$ —**
Derivative assets	**$ —**	**$ —**	**$ —**	**$ 1,114**
Derivative liabilities	**—**	**—**	**—**	**201**

	At December 31, 2021			
$ in millions	RML	CML	U.S. Agency CMO	CLN and Other[1]
SPE assets (UPB)[2, 4]	$ 6,802	$ 94,276	$ 28,697	$ 13,121
Retained interests				
Investment grade	$ 72	$ 638	$ 465	$ —
Non-investment grade	19	586	—	69
Total	$ 91	$ 1,224	$ 465	$ 69
Interests purchased in the secondary market[5]				
Investment grade	$ 18	$ 118	$ 33	$ —
Non-investment grade	38	53	—	4
Total	$ 56	$ 171	$ 33	$ 4
Derivative assets	$ —	$ —	$ —	$ 891
Derivative liabilities	—	—	—	284

	Fair Value at December 31, 2022		
$ in millions	Level 2	Level 3	Total
Retained interests			
Investment grade	**$ 489**	**$ —**	**$ 489**
Non-investment grade	**25**	**16**	**41**
Total	**$ 514**	**$ 16**	**$ 530**
Interests purchased in the secondary market[3]			
Investment grade	**$ 140**	**$ 3**	**$ 143**
Non-investment grade	**42**	**16**	**58**
Total	**$ 182**	**$ 19**	**$ 201**
Derivative assets	**$ 1,114**	**$ —**	**$ 1,114**
Derivative liabilities	**153**	**48**	**201**

	Fair Value at December 31, 2021		
$ in millions	Level 2	Level 3	Total
Retained interests			
Investment grade	$ 536	$ 2	$ 538
Non-investment grade	40	40	80
Total	$ 576	$ 42	$ 618
Interests purchased in the secondary market[5]			
Investment grade	$ 168	$ 1	$ 169
Non-investment grade	70	25	95
Total	$ 238	$ 26	$ 264
Derivative assets	$ 891	$ —	$ 891
Derivative liabilities	194	90	284

RML—Residential mortgage loans
CML—Commercial mortgage loans
1. Amounts include CLO transactions managed by unrelated third parties.
2. Amounts include assets transferred by unrelated transferors.
3. Amounts are only included for transactions where the Firm also holds retained interests as part of the transfer.
4. Amounts in aggregate include $41 billion related to interests purchased in the secondary market where the Firm held no retained interest.
5. Amounts in aggregate include $168 million of interests purchased in the secondary market where the Firm held no retained interest.

The previous tables include transactions with SPEs in which the Firm, acting as principal, transferred financial assets with continuing involvement and received sales treatment. The transferred assets are carried at fair value prior to securitization, and any changes in fair value are recognized in the income statement. The Firm may act as underwriter of the beneficial interests issued by these securitization vehicles, for which Investment banking revenues are recognized. The Firm may retain interests in the securitized financial assets as one or more tranches of the securitization. Certain retained interests are carried at fair value in the balance sheet with changes in fair value recognized in the income statement. Fair value for these interests is measured using techniques that are consistent with the valuation techniques applied to the Firm's major categories of assets and liabilities as described in Notes 2 and 5. Further, as permitted by applicable guidance, certain transfers of assets where the Firm's only continuing involvement is a derivative are only reported in the following Assets Sold with Retained Exposure table.

Proceeds from New Securitization Transactions and Sales of Loans

$ in millions	2022	2021	2020
New transactions[1]	**$ 22,136**	$ 57,528	$ 51,814
Retained interests	**4,862**	8,822	9,346
Sales of corporate loans to CLO SPEs[1, 2]	**62**	169	763

1. Net gains on new transactions and sales of corporate loans to CLO entities at the time of the sale were not material for all periods presented.
2. Sponsored by non-affiliates.

The Firm has provided, or otherwise agreed to be responsible for, representations and warranties regarding certain assets transferred in securitization transactions sponsored by the Firm (see Note 15).

Assets Sold with Retained Exposure

$ in millions	At December 31, 2022	At December 31, 2021
Gross cash proceeds from sale of assets[1]	**$ 49,059**	$ 67,930
Fair value		
Assets sold	**$ 47,281**	$ 68,992
Derivative assets recognized in the balance sheet	**116**	1,195
Derivative liabilities recognized in the balance sheet	**1,893**	132

1. The carrying value of assets derecognized at the time of sale approximates gross cash proceeds.

The Firm enters into transactions in which it sells securities, primarily equities, and contemporaneously enters into bilateral OTC derivatives with the purchasers of the securities, through which it retains exposure to the sold securities.

17. Regulatory Requirements

Regulatory Capital Framework

The Firm is an FHC under the Bank Holding Company Act of 1956, as amended, and is subject to the regulation and oversight of the Board of Governors of the Federal Reserve System ("Federal Reserve"). The Federal Reserve establishes capital requirements for the Firm, including "well-capitalized" standards, and evaluates the Firm's compliance with such capital requirements. The OCC establishes similar capital requirements and standards for the Firm's U.S. bank subsidiaries, including, among others, MSBNA and MSPBNA (together, "U.S. Bank Subsidiaries"). The regulatory capital requirements are largely based on the Basel III capital standards established by the Basel Committee on Banking Supervision and also implement certain provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act. In addition, many of the Firm's regulated subsidiaries are subject to regulatory capital requirements, including regulated subsidiaries provisionally registered as swap dealers with the CFTC or conditionally registered as security-based swap dealers with the SEC or registered as broker-dealers or futures commission merchants.

Regulatory Capital Requirements

The Firm is required to maintain minimum risk-based and leverage-based capital ratios under regulatory capital requirements. A summary of the calculations of regulatory capital and RWA follows.

Risk-Based Regulatory Capital. Risk-based capital ratio requirements apply to Common Equity Tier 1 capital, Tier 1 capital and Total capital (which includes Tier 2 capital), each as a percentage of RWA, and consist of regulatory minimum required ratios plus the Firm's capital buffer requirement. Capital requirements require certain adjustments to, and deductions from, capital for purposes of determining these ratios.

CECL Deferral. As of December 31, 2021, the risk-based and leverage-based capital amounts and ratios, as well as RWA, adjusted average assets and supplementary leverage exposure were calculated excluding the effect of the adoption of CECL based on the Firm's election to defer this effect over a five-year transition period that began on January 1, 2020. In 2022 the deferral impacts began to phase in at 25% per year and will become fully phased-in beginning in 2025.

Capital Buffer Requirements

	At December 31, 2022	At December 31, 2021	At December 31, 2022 and December 31, 2021
	Standardized	Standardized	Advanced
Capital buffers			
Capital conservation buffer	**—**	—	**2.5%**
SCB	**5.8%**	5.7%	**N/A**
G-SIB capital surcharge	**3.0%**	3.0%	**3.0%**
CCyB[1]	**0%**	0%	**0%**
Capital buffer requirement	**8.8%**	8.7%	**5.5%**

1. The CCyB can be set up to 2.5% but is currently set by the Federal Reserve at zero.

The capital buffer requirement represents the amount of Common Equity Tier 1 capital the Firm must maintain above the minimum risk-based capital requirements in order to avoid restrictions on the Firm's ability to make capital distributions, including the payment of dividends and the repurchase of stock, and to pay discretionary bonuses to executive officers. The Firm's capital buffer requirement computed under the standardized approaches for calculating credit risk and market risk RWA ("Standardized Approach") is equal to the sum of the SCB, G-SIB capital surcharge and CCyB, and the capital buffer requirement computed under the applicable advanced approaches for calculating credit risk, market risk and opeational risk RWA ("Advanced Approach") is equal to the 2.5% capital conservation buffer, G-SIB capital surcharge and CCyB.

Risk-Based Regulatory Capital Ratio Requirements

	Regulatory Minimum	At December 31, 2022	At December 31, 2021	At December 31, 2022 and December 31, 2021
		Standardized	Standardized	Advanced
Required ratios[1]				
Common Equity Tier 1 capital ratio	**4.5%**	**13.3%**	13.2%	**10.0%**
Tier 1 capital ratio	**6.0%**	**14.8%**	14.7%	**11.5%**
Total capital ratio	**8.0%**	**16.8%**	16.7%	**13.5%**

1. Required ratios represent the regulatory minimum plus the capital buffer requirement.

Risk-Weighted Assets

RWA reflects both the Firm's on- and off-balance sheet risk, as well as capital charges attributable to the risk of loss arising from the following:

- Credit Risk: The failure of a borrower, counterparty or issuer to meet its financial obligations to the Firm;
- Market Risk: Adverse changes in the level of one or more market prices, rates, indices, volatilities, correlations or other market factors, such as market liquidity; and
- Operational Risk: Inadequate or failed processes or systems from human factors or from external events (*e.g.*, fraud, theft, legal and compliance risks, cyber attacks or damage to physical assets).

The Firm's risk-based capital ratios are computed under both (i) the Standardized Approach and (ii) the Advanced Approach. The credit risk RWA calculations between the two approaches differ in that the Standardized Approach requires calculation of RWA using prescribed risk weights, whereas the Advanced Approach utilizes models to calculate exposure amounts and risk weights. At December 31, 2022 and December 31, 2021, the differences between the actual and required ratio were lower under the Standardized Approach.

Leverage-Based Regulatory Capital. Leverage-based capital requirements include a minimum Tier 1 leverage ratio of 4%, a minimum SLR of 3% and an enhanced SLR capital buffer of at least 2%.

The Firm's Regulatory Capital and Capital Ratios

$ in millions	Required Ratio[1]	At December 31, 2022	Required Ratio[1]	At December 31, 2021
Risk-based capital				
Common Equity Tier 1 capital		**$ 68,670**		$ 75,742
Tier 1 capital		**77,191**		83,348
Total capital		**86,575**		93,166
Total RWA		**447,849**		471,921
Common Equity Tier 1 capital ratio	**13.3%**	**15.3%**	13.2%	16.0%
Tier 1 capital ratio	**14.8%**	**17.2%**	14.7%	17.7%
Total capital ratio	**16.8%**	**19.3%**	16.7%	19.7%

$ in millions	Required Ratio[1]	At December 31, 2022	At December 31, 2021
Leverage-based capital			
Adjusted average assets[2]		**$ 1,150,772**	$ 1,169,939
Tier 1 leverage ratio	**4.0%**	**6.7%**	7.1%
Supplementary leverage exposure[3]		**$ 1,399,403**	$ 1,476,962
SLR	**5.0%**	**5.5%**	5.6%

1. Required ratios are inclusive of any buffers applicable as of the date presented.
2. Adjusted average assets represents the denominator of the Tier 1 leverage ratio and is composed of the average daily balance of consolidated on-balance sheet assets for the quarters ending on the respective balance sheet dates, reduced by disallowed goodwill, intangible assets, investments in covered funds, defined benefit pension plan assets, after-tax gain on sale from assets sold into securitizations, investments in the Firm's own capital instruments, certain defined tax assets and other capital deductions.
3. Supplementary leverage exposure is the sum of Adjusted average assets used in the Tier 1 leverage ratio and other adjustments, primarily: (i) for derivatives, potential future exposure and the effective notional principal amount of sold credit protection, offset by qualifying purchased credit protection; (ii) the counterparty credit risk for repo-style transactions; and (iii) the credit equivalent amount for off-balance sheet exposures.

U.S. Bank Subsidiaries' Regulatory Capital and Capital Ratios

The OCC establishes capital requirements for the U.S. Bank Subsidiaries, and evaluates their compliance with such capital requirements. Regulatory capital requirements for the U.S. Bank Subsidiaries are calculated in a similar manner to the Firm's regulatory capital requirements, although G-SIB capital surcharge and SCB requirements do not apply to the U.S. Bank Subsidiaries.

The OCC's regulatory capital framework includes Prompt Corrective Action ("PCA") standards, including "well-capitalized" PCA standards that are based on specified regulatory capital ratio minimums. For the Firm to remain an

FHC, its U.S. Bank Subsidiaries must remain well-capitalized in accordance with the OCC's PCA standards. In addition, failure by the U.S. Bank Subsidiaries to meet minimum capital requirements may result in certain mandatory and discretionary actions by regulators that, if undertaken, could have a direct material effect on the U.S. Bank Subsidiaries' and the Firm's financial statements.

At December 31, 2022 and December 31, 2021, MSBNA and MSPBNA risk-based capital ratios are based on the Standardized Approach rules. At December 31, 2021, the risk-based and leverage-based capital amounts and ratios, as well as RWA, adjusted average assets and supplementary leverage exposure were calculated excluding the effect of the adoption of CECL based on the Firm's election to defer this effect over a five-year transition period that began on January 1, 2020. In 2022 the deferral impacts began to phase in at 25% per year and will become fully phased-in beginning in 2025.

MSBNA's Regulatory Capital

			At December 31, 2022		At December 31, 2021	
$ in millions	Well-Capitalized Requirement	Required Ratio[1]	Amount	Ratio	Amount	Ratio
Risk-based capital						
Common Equity Tier 1 capital	**6.5 %**	**7.0 %**	**$ 20,043**	**20.5 %**	$18,960	20.5 %
Tier 1 capital	**8.0 %**	**8.5 %**	**20,043**	**20.5 %**	18,960	20.5 %
Total capital	**10.0 %**	**10.5 %**	**20,694**	**21.1 %**	19,544	21.1 %
Leverage-based capital						
Tier 1 leverage	**5.0 %**	**4.0 %**	**$ 20,043**	**10.1 %**	$18,960	10.2 %
SLR	**6.0 %**	**3.0 %**	**20,043**	**8.1 %**	18,960	8.1 %

MSPBNA's Regulatory Capital

			At December 31, 2022[2]		At December 31, 2021	
$ in millions	Well-Capitalized Requirement	Required Ratio[1]	Amount	Ratio	Amount	Ratio
Risk-based capital						
Common Equity Tier 1 capital	**6.5 %**	**7.0 %**	**$ 15,546**	**27.5 %**	$10,293	24.3 %
Tier 1 capital	**8.0 %**	**8.5 %**	**15,546**	**27.5 %**	10,293	24.3 %
Total capital	**10.0 %**	**10.5 %**	**15,695**	**27.8 %**	10,368	24.5 %
Leverage-based capital						
Tier 1 leverage	**5.0 %**	**4.0 %**	**$ 15,546**	**7.6 %**	$10,293	6.9 %
SLR	**6.0 %**	**3.0 %**	**15,546**	**7.4 %**	10,293	6.7 %

1. Required ratios are inclusive of any buffers applicable as of the date presented. Failure to maintain the buffers would result in restrictions on the ability to make capital distributions, including the payment of dividends.
2. Regulatory capital amounts and ratios as of December 31, 2022 include the amounts from E*TRADE Bank ("ETB") and E*TRADE Savings Bank ("ETSB") as a result of the mergers described herein.

Additionally, MSBNA is conditionally registered with the SEC as a security-based swap dealer and is provisionally registered with the CFTC as a swap dealer. However, as MSBNA is prudentially regulated as a bank, its capital requirements continue to be determined by the OCC.

Other Regulatory Capital Requirements

MS&Co. Regulatory Capital

$ in millions	At December 31, 2022	At December 31, 2021
Net capital	**$ 17,224**	$ 18,383
Excess net capital	**12,861**	14,208

MS&Co. is registered as a broker-dealer and a futures commission merchant with the SEC and the CFTC, respectively, and provisionally registered as a swap dealer with the CFTC.

As an Alternative Net Capital broker-dealer, and in accordance with Securities Exchange Act of 1934 ("Exchange Act") Rule 15c3-1, Appendix E, MS&Co. is subject to minimum net capital and tentative net capital requirements and operates with capital in excess of its regulatory capital requirements. As a futures commission merchant and provisionally-registered swap dealer, MS&Co. is subject to CFTC capital requirements. In addition, MS&Co. must notify the SEC if its tentative net capital falls below certain levels. At December 31, 2022 and December 31, 2021, MS&Co. exceeded its net capital requirement and had tentative net capital in excess of the minimum and notification requirements.

Other Regulated Subsidiaries

The following subsidiaries are also subject to various regulatory capital requirements and operated with capital in excess of their respective regulatory capital requirements as of December 31, 2022 and December 31, 2021, as applicable:

- MSSB, a registered U.S. broker-dealer and introducing broker for the futures business, is subject to, respectively, the minimum net capital requirements of the SEC and CFTC.
- MSIP, a London-based broker-dealer subsidiary, is subject to the capital requirements of the PRA. MSIP is also conditionally registered with the SEC as a security-based swap dealer and provisionally registered with the CFTC as a swap dealer, but is currently complying with home-country capital requirements in lieu of SEC and CFTC capital requirements pursuant to applicable substituted compliance rules and interim no-action relief.
- Morgan Stanley Europe Holdings SE Group ("MSEHSE Group"), including MSESE, a Germany-based broker-dealer, is subject to the capital requirements of the European Central Bank, BaFin and the German Central Bank. MSESE is also conditionally registered with the SEC as a security-based swap dealer and provisionally registered with the CFTC as a swap dealer. Pursuant to interim no-action relief, MSESE is currently complying with home-country capital requirements in lieu of CFTC capital requirements. Pursuant to interim no-action relief as of year end 2022 and then applicable substituted compliance rules with effect from January 1, 2023, MSESE has been complying with home-country capital requirements in lieu of SEC capital requirements.

- MSMS, a Tokyo-based broker-dealer subsidiary, is subject to the capital requirements of the Financial Services Agency. MSMS is also provisionally registered with the CFTC as a swap dealer but is currently complying with home-country capital requirements in lieu of CFTC capital requirements pursuant to interim no-action relief.
- MSCS, a U.S. entity and the Firm's primary non-bank security-based swap dealer, is conditionally registered with the SEC as a security-based swap dealer, registered with the SEC as an OTC derivatives dealer and provisionally registered with the CFTC as a swap dealer. MSCS is subject to the capital requirements of both regulators.
- MSCG, a U.S. entity, is provisionally registered with the CFTC as a swap dealer and is subject to its capital requirements.
- E*TRADE Securities LLC, a registered broker-dealer, is subject to the minimum net capital requirements of the SEC.

ETB and ETSB were each previously subject to the capital requirements of the OCC until January 1, 2022, when ETSB merged with and into ETB, and subsequently ETB merged with and into MSPBNA, with MSPBNA as the surviving bank.

Certain other U.S. and non-U.S. subsidiaries of the Firm are subject to various securities, commodities and banking regulations, and capital adequacy requirements promulgated by the regulatory and exchange authorities of the countries in which they operate. These subsidiaries have also consistently operated with capital in excess of their local capital adequacy requirements.

Restrictions on Payments

The regulatory capital requirements referred to above, and certain covenants contained in various agreements governing indebtedness of the Firm, may restrict the Firm's ability to withdraw capital from its subsidiaries. The following table represents net assets of consolidated subsidiaries that may be restricted as to the payment of cash dividends and advances to the Parent Company.

$ in millions	At December 31, 2022	At December 31, 2021
Restricted net assets	$ 45,896	$ 49,516

18. Total Equity

Morgan Stanley Shareholders' Equity

Preferred Stock

$ in millions, except per share data	Shares Outstanding At December 31, 2022	Liquidation Preference per Share	Carrying Value At December 31, 2022	Carrying Value At December 31, 2021
Series				
A	44,000	$ 25,000	$ 1,100	$ 1,100
C[1]	519,882	1,000	408	408
E	34,500	25,000	862	862
F	34,000	25,000	850	850
I	40,000	25,000	1,000	1,000
K	40,000	25,000	1,000	1,000
L	20,000	25,000	500	500
M	400,000	1,000	430	430
N	3,000	100,000	300	300
O	52,000	25,000	1,300	1,300
P[2]	40,000	25,000	1,000	—
Total			$ 8,750	$ 7,750
Shares authorized				30,000,000

1. Series C preferred stock is held by MUFG.
2. The Firm issued Series P Preferred Stock on August 2, 2022.

The Firm's preferred stock has a preference over its common stock upon liquidation. The Firm's preferred stock qualifies as and is included in Tier 1 capital in accordance with regulatory capital requirements (see Note 17).

Description of Preferred Stock as of December 31, 2022

Series[1, 2]	Shares Issued	Depositary Shares per Share	Redemption Price per Share[3]	Redemption Date[4]
A	44,000	1,000	$ 25,000	Currently redeemable
C[5]	1,160,791	N/A	1,100	Currently redeemable
E	34,500	1,000	25,000	October 15, 2023
F	34,000	1,000	25,000	January 15, 2024
I	40,000	1,000	25,000	October 15, 2024
K	40,000	1,000	25,000	April 15, 2027
L	20,000	1,000	25,000	January 15, 2025
M[6]	400,000	N/A	1,000	September 15, 2026
N[6]	3,000	100	100,000	October 2, 2025
O[7]	52,000	1,000	25,000	January 15, 2027
P	40,000	1,000	25,000	October 15, 2027

1. All shares issued are non-cumulative. Each share has a par value of $0.01, except Series C.
2. Dividends on Series A are based on a floating rate, and dividends on Series C, L and O are based on a fixed rate. Dividends on all other Series are based on a fixed-to-floating rate.
3. Series A and C are redeemable at the redemption price plus accrued and unpaid dividends, regardless of whether dividends are actually declared, up to but excluding the date of redemption. All other Series are redeemable at the redemption price plus any declared and unpaid dividends, up to but excluding the date fixed for redemption.
4. Series A and C are currently redeemable at the Firm's option, in whole or in part, from time to time. All other Series are redeemable, at the Firm's option (i) in whole or in part, from time to time, on any dividend payment date on or after the redemption date or (ii) in whole but not in part at any time within 90 days following a regulatory capital treatment event (as described in the terms of that series).
5. Series C is non-voting perpetual preferred stock. Dividends on the Series C preferred stock are payable, on a non-cumulative basis, as and if declared by the Board of Directors, in cash, at the rate of 10% per annum of the liquidation preference of $1,000 per share.
6. Series M and N Preferred Stock were issued on October 2, 2020 as part of the acquisition of E*TRADE.
7. The Firm issued Series O Preferred Stock on October 25, 2021.

Common Stock

Rollforward of Common Stock Outstanding

in millions	**2022**	2021
Shares outstanding at beginning of period	**1,772**	1,810
Treasury stock purchases[1]	**(124)**	(134)
Issuance for the acquisition of Eaton Vance	**—**	69
Other[2]	**27**	27
Shares outstanding at end of period	**1,675**	1,772

1. The Firm's Board of Directors has authorized the repurchase of the Firm's outstanding stock under a share repurchase program ("Share Repurchase Program"). In addition to the Firm's Share Repurchase Program, Treasury stock purchases include repurchases of common stock for employee tax withholding.
2. Other includes net shares issued to and forfeited from employee stock trusts and issued for RSU conversions.

Share Repurchases

$ in millions	**2022**	2021
Repurchases of common stock under the Firm's Share Repurchase Program	**$ 9,865**	$ 11,464

On June 27, 2022, the Firm announced that its Board of Directors approved a new multi-year repurchase authorization of up to $20 billion of outstanding common stock, without a set expiration date, beginning in the third quarter of 2022, which will be exercised from time to time as conditions warrant.

Pursuant to the Share Repurchase Program, the Firm considers, among other things, business segment capital needs, as well as stock-based compensation and benefit plan requirements. Share repurchases under the program will be exercised from time to time at prices the Firm deems appropriate subject to various factors, including the Firm's capital position and market conditions. The share repurchases may be effected through open market purchases or privately negotiated transactions, including through Rule 10b5-1 plans, and may be suspended at any time.

Common Shares Outstanding for Basic and Diluted EPS

in millions	**2022**	2021	2020
Weighted average common shares outstanding, basic	**1,691**	1,785	1,603
Effective of dilutive RSUs and PSUs	**22**	29	21
Weighted average common shares outstanding and common stock equivalents, diluted	**1,713**	1,814	1,624
Weighted average antidilutive common stock equivalents (excluded from the computation of diluted EPS)	**3**	—	5

Dividends

	2022		2021		2020	
$ in millions, except per share data	**Per Share[1]**	**Total**	Per Share[1]	Total	Per Share[1]	Total
Preferred Stock Series						
A	**$1,061**	**$ 47**	$1,022	$ 44	$1,017	$ 44
C	**100**	**52**	100	52	100	52
E	**1,781**	**60**	1,781	60	1,781	60
F	**1,719**	**59**	1,719	60	1,719	60
H[2]	**—**	**—**	719	38	1,143	60
I	**1,594**	**64**	1,594	64	1,594	64
J[3]	**—**	**—**	253	15	1,213	74
K	**1,463**	**59**	1,463	59	1,463	59
L	**1,219**	**24**	1,219	24	1,219	23
M[4]	**59**	**24**	59	24	—	—
N[5]	**5,300**	**16**	5,300	16	—	—
O[6]	**1,063**	**55**	236	12	—	—
P	**736**	**29**	—	—	—	—
Total Preferred stock		**$ 489**		$ 468		$ 496
Common stock	**$2.950**	**$ 5,108**	$2.100	$ 3,818	$1.400	$ 2,295

1. Common and Preferred Stock dividends are payable quarterly unless otherwise noted.
2. A notice of redemption was issued for Series H preferred stock on November 19, 2021. Dividends declared on Series H following the issuance of the notice of redemption were recognized as Interest expense and are excluded from the 2021 amounts.
3. Series J was payable semiannually until July 15, 2020, after which it was payable quarterly until its redemption.
4. Series M is payable semiannually until September 15, 2026 and thereafter will be payable quarterly.
5. Series N is payable semiannually until March 15, 2023 and thereafter will be payable quarterly.
6. Series O is payable semiannually until January 15, 2027 and thereafter will be payable quarterly.

Accumulated Other Comprehensive Income (Loss)[1]

$ in millions	CTA	AFS Securities	Pension and Other	DVA	Cash Flow Hedges	Total
December 31, 2019	$ (897)	$ 207	$ (644)	$(1,454)	$ —	$(2,788)
OCI during the period	102	1,580	146	(1,002)	—	826
December 31, 2020	(795)	1,787	(498)	(2,456)	—	(1,962)
OCI during the period	(207)	(1,542)	(53)	662	—	(1,140)
December 31, 2021	(1,002)	245	(551)	(1,794)	—	(3,102)
OCI during the period	**(202)**	**(4,437)**	**43**	**1,449**	**(4)**	**(3,151)**
December 31, 2022	**$(1,204)**	**$ (4,192)**	**$ (508)**	**$ (345)**	**$ (4)**	**$(6,253)**

CTA—Cumulative foreign currency translation adjustments
1. Amounts are net of tax and noncontrolling interests.

Components of Period Changes in OCI

$ in millions	Pre-tax Gain (Loss)	Income Tax Benefit (Provision)	After-tax Gain (Loss)	Non-controlling Interests	Net
2022					
CTA					
OCI activity	**$ (179)**	**$ (217)**	**$ (396)**	**$ (135)**	**$ (261)**
Reclassified to earnings	**—**	**59**	**59**	**—**	**59**
Net OCI	**$ (179)**	**$ (158)**	**$ (337)**	**$ (135)**	**$ (202)**
Change in net unrealized gains (losses) on AFS securities					
OCI activity	**$(5,720)**	**$ 1,337**	**$ (4,383)**	**$ —**	**$(4,383)**
Reclassified to earnings	**(70)**	**16**	**(54)**	**—**	**(54)**
Net OCI	**$(5,790)**	**$ 1,353**	**$ (4,437)**	**$ —**	**$(4,437)**
Pension and other					
OCI activity	**$ 38**	**$ (13)**	**$ 25**	**$ —**	**$ 25**
Reclassified to earnings	**22**	**(4)**	**18**	**—**	**18**
Net OCI	**$ 60**	**$ (17)**	**$ 43**	**$ —**	**$ 43**
Change in net DVA					
OCI activity	**$ 1,982**	**$ (480)**	**$ 1,502**	**$ 53**	**$ 1,449**
Reclassified to earnings	**—**	**—**	**—**	**—**	**—**
Net OCI	**$ 1,982**	**$ (480)**	**$ 1,502**	**$ 53**	**$ 1,449**
Change in fair value of cash flow hedge derivatives					
OCI activity	**$ (4)**	**$ —**	**$ (4)**	**$ —**	**$ (4)**
Reclassified to earnings	**—**	**—**	**—**	**—**	**$ —**
Net OCI	**$ (4)**	**$ —**	**$ (4)**	**$ —**	**$ (4)**

$ in millions	Pre-tax Gain (Loss)	Income Tax Benefit (Provision)	After-tax Gain (Loss)	Non-controlling Interests	Net
2021					
CTA					
OCI activity	$ (140)	$ (191)	$ (331)	$ (124)	$ (207)
Reclassified to earnings	—	—	—	—	—
Net OCI	$ (140)	$ (191)	$ (331)	$ (124)	$ (207)
Change in net unrealized gains (losses) on AFS securities					
OCI activity	$(1,803)	$ 422	$ (1,381)	$ —	$(1,381)
Reclassified to earnings	(210)	49	(161)	—	(161)
Net OCI	$(2,013)	$ 471	$ (1,542)	$ —	$(1,542)
Pension and other					
OCI activity	$ (101)	$ 26	$ (75)	$ —	$ (75)
Reclassified to earnings	31	(9)	22	—	22
Net OCI	$ (70)	$ 17	$ (53)	$ —	$ (53)
Change in net DVA					
OCI activity	$ 882	$ (213)	$ 669	$ 34	$ 635
Reclassified to earnings	36	(9)	27	—	27
Net OCI	$ 918	$ (222)	$ 696	$ 34	$ 662

$ in millions	Pre-tax Gain (Loss)	Income Tax Benefit (Provision)	After-tax Gain (Loss)	Non-controlling Interests	Net
2020					
CTA					
OCI activity	$ 74	$ 99	$ 173	$ 68	$ 105
Reclassified to earnings	(3)	—	(3)	—	(3)
Net OCI	$ 71	$ 99	$ 170	$ 68	$ 102
Change in net unrealized gains (losses) on AFS securities					
OCI activity	$ 2,194	$ (508)	$ 1,686	$ —	$ 1,686
Reclassified to earnings	(137)	31	(106)	—	(106)
Net OCI	$ 2,057	$ (477)	$ 1,580	$ —	$ 1,580
Pension and other					
OCI activity	$ 162	$ (34)	$ 128	$ —	$ 128
Reclassified to earnings	23	(5)	18	—	18
Net OCI	$ 185	$ (39)	$ 146	$ —	$ 146
Change in net DVA					
OCI activity	$(1,385)	$ 337	$ (1,048)	$ (26)	$(1,022)
Reclassified to earnings	26	(6)	20	—	20
Net OCI	$(1,359)	$ 331	$ (1,028)	$ (26)	$(1,002)

Cumulative Foreign Currency Translation Adjustments

$ in millions	**At December 31, 2022**	At December 31, 2021
Associated with net investments in subsidiaries with a non-U.S. dollar functional currency	**$ (3,136)**	$ (2,277)
Hedges, net of tax	**1,932**	1,275
Total	**$ (1,204)**	$ (1,002)
Carrying value of net investments in non-U.S. dollar functional currency subsidiaries subject to hedges	**$ 17,023**	$ 15,605

Cumulative foreign currency translation adjustments include gains or losses resulting from translating foreign currency financial statements from their respective functional currencies to U.S. dollars, net of hedge gains or losses and related tax effects. The Firm uses foreign currency contracts to manage the currency exposure relating to its net investments in non-U.S. dollar functional currency subsidiaries and determines the amount of exposure to hedge on a pre-tax basis. The Firm may also elect not to hedge its net investments in certain foreign operations due to market conditions or other reasons, including the availability of various currency contracts at acceptable costs. Information relating to the effects on cumulative foreign currency translation adjustments that resulted from the translation of foreign currency financial statements and from gains and losses from hedges of the Firm's net investments in non-U.S. dollar functional currency subsidiaries is summarized in the previous table.

19. Interest Income and Interest Expense

$ in millions	2022	2021	2020
Interest income			
Investment securities	**$ 3,066**	$ 2,759	$ 2,282
Loans	**6,988**	4,209	4,142
Securities purchased under agreements to resell[1]	**2,188**	(181)	458
Securities borrowed[2]	**1,020**	(1,017)	(652)
Trading assets, net of Trading liabilities	**2,484**	2,038	2,417
Customer receivables and Other[3]	**5,849**	1,603	1,515
Total interest income	**$ 21,595**	$ 9,411	$ 10,162
Interest expense			
Deposits	**$ 1,825**	$ 409	$ 953
Borrowings	**5,054**	2,725	3,250
Securities sold under agreements to repurchase[4]	**1,760**	93	564
Securities loaned[5]	**503**	401	419
Customer payables and Other[6]	**3,126**	(2,262)	(1,337)
Total interest expense	**$ 12,268**	$ 1,366	$ 3,849
Net interest	**$ 9,327**	$ 8,045	$ 6,313

1. Includes interest paid on Securities purchased under agreements to resell.
2. Includes fees paid on Securities borrowed.
3. Includes interest from Cash and cash equivalents.
4. Includes interest received on Securities sold under agreements to repurchase.
5. Includes fees received on Securities loaned.
6. Includes fees received from Equity Financing customers related to their short transactions, which can be under either margin or securities lending arrangements.

Interest income and Interest expense are classified in the income statement based on the nature of the instrument and related market conventions. When included as a component of the instrument's fair value, interest is included within Trading revenues or Investments revenues. Otherwise, it is included within Interest income or Interest expense.

Accrued Interest

$ in millions	At December 31, 2022	At December 31, 2021
Customer and other receivables	**$ 4,139**	$ 1,800
Customer and other payables	**4,273**	2,164

20. Deferred Compensation Plans and Carried Interest Compensation

Stock-Based Compensation Plans

Certain current and former employees of the Firm participate in the Firm's stock-based compensation plans. These plans include RSUs, PSUs and an ESPP.

Stock-Based Compensation Expense

$ in millions	2022	2021	2020
RSUs	**$ 1,827**	$ 1,834	$ 1,170
PSUs	**40**	251	142
ESPP	**8**	—	—
Total	**$ 1,875**	$ 2,085	$ 1,312
Retirement-eligible awards[1]	**$ 176**	$ 192	$ 157

1. Total expense includes stock-based compensation anticipated to be awarded in January of the following year that does not contain a future service requirement.

Tax Benefit Related to Stock-Based Compensation Expense

$ in millions	2022	2021	2020
Tax benefit[1]	**$ 427**	$ 432	$ 270

1. Excludes income tax consequences related to employee share-based award conversions.

Unrecognized Compensation Cost Related to Stock-Based Awards Granted

$ in millions	At December 31, 2022[1]
To be recognized in:	
2023	**$ 643**
2024	**282**
Thereafter	**48**
Total	**$ 973**

1. Amounts do not include forfeitures, future adjustments to fair value for certain awards or 2022 performance year compensation awarded in January 2023, which will begin to be amortized in 2023.

In connection with awards under its stock-based compensation plans, the Firm is authorized to issue shares of common stock held in treasury or newly issued shares.

The Firm generally uses treasury shares, if available, to deliver shares to employees or employee stock trusts and has an ongoing repurchase authorization that includes repurchases in connection with awards under its stock-based compensation plans.

Common Shares Available for Future Awards under Stock-Based Compensation Plans

in millions	At December 31, 2022
Shares	**134**

See Note 18 for additional information on the Firm's Share Repurchase Program.

Restricted Stock Units

RSUs are subject to vesting over time, generally one to seven years from the date of award, contingent upon continued employment and subject to restrictions on sale, transfer or assignment until conversion to common stock. All or a portion of an award may be forfeited if employment is terminated before the end of the relevant vesting period or canceled after the relevant vesting period in certain situations. Recipients of RSUs may have voting rights, at the Firm's discretion, and generally receive dividend equivalents if the awards vest.

Vested and Unvested RSU Activity

	2022	
shares in millions	Number of Shares	Weighted Average Award Date Fair Value
RSUs at beginning of period	67	$ 60.27
Awarded	**23**	**96.61**
Conversions to common stock	**(25)**	**51.71**
Forfeited	**(2)**	**78.07**
RSUs at end of period[1]	**63**	**$ 76.31**
Aggregate intrinsic value of RSUs at end of period (dollars in millions)		**$ 5,366**
Weighted average award date fair value		
RSUs awarded in 2021		77.28
RSUs awarded in 2020		55.01

1. At December 31, 2022, the weighted average remaining term until delivery for the outstanding RSUs was approximately 1.2 years.

Unvested RSU Activity

	2022	
shares in millions	Number of Shares	Weighted Average Award Date Fair Value
Unvested RSUs at beginning of period	39	$ 65.58
Awarded	**23**	**96.61**
Vested	**(25)**	**68.38**
Forfeited	**(2)**	**78.07**
Unvested RSUs at end of period[1]	**35**	**$ 83.41**

1. Unvested RSUs represent awards where recipients have yet to satisfy either the explicit vesting terms or retirement-eligible requirements.

Fair Value of RSU Activity[1]

$ in millions	**2022**	2021	2020
Conversions to common stock	**$ 2,301**	$ 1,539	$ 1,295
Vested	**2,433**	1,647	1,289

1. Fair value of converted stock is based on the share price at conversion. Fair value of vested stock is based on the share price at date of vesting.

Performance-Based Stock Units

PSUs will vest and convert to shares of common stock only if the Firm satisfies predetermined performance and market-based conditions over a three-year performance period. The number of PSUs that will vest ranges from 0% to 150% of the target award, based on the extent to which the Firm achieves the specified performance goals. One-half of the award is earned based on either the Firm's average return on equity, excluding certain adjustments ("MS Adjusted ROE") or for awards granted beginning in 2021, the Firm's average return on tangible common equity excluding certain adjustments ("MS Adjusted ROTCE"). The other half of the award will be earned based on the Firm's total shareholder return, relative to the total shareholder return of the S&P 500 Financials Sector Index ("Relative MS TSR"). PSUs have vesting, restriction and cancellation provisions that are generally similar to those of RSUs. At December 31, 2022, approximately 2.5 million PSUs were outstanding.

PSU Fair Value on Award Date

	2022	2021	2020
MS Adjusted ROTCE/ROE	**$ 100.12**	$ 74.87	$ 57.05
Relative MS TSR	**102.17**	83.70	65.31

The Relative MS TSR fair values on the award date were estimated using a Monte Carlo simulation and the following assumptions.

Monte Carlo Simulation Assumptions

	Risk-Free Interest Rate	Expected Stock Price Volatility	Correlation Coefficient
Award year			
2022	**1.3 %**	**38.9 %**	**0.91**
2021	0.2 %	39.0 %	0.92
2020	1.6 %	24.0 %	0.88

The risk-free interest rate was determined based on the yields available on U.S. Treasury zero-coupon issues. The expected stock price volatility was determined using historical volatility. The correlation coefficient was developed based on historical price data of the Firm and the S&P 500 Financials Sector Index. The model uses an expected dividend yield equivalent to reinvesting dividends.

Deferred Cash-Based Compensation Plans

Deferred cash-based compensation plans generally provide a return to the plan participants based upon the performance of each participant's referenced investments.

Deferred Cash-Based Compensation Expense

$ in millions	**2022**	2021	2020
Deferred cash-based awards	**$ 761**	$ 810	$ 1,263
Return on referenced investments	**(716)**	526	856
Total	**$ 45**	$ 1,336	$ 2,119
Retirement-eligible awards[1]	**$ 264**	$ 253	$ 194

1. Total expense includes deferred cash-based compensation anticipated to be awarded in January of the following year that does not contain a future service requirement.

Carried Interest Compensation

The Firm generally recognizes compensation expense for any portion of carried interest (both realized and unrealized) that is allocated to employees.

Carried Interest Compensation Expense

$ in millions	**2022**	2021	2020
Expense	**$ 225**	$ 346	$ 215

21. Employee Benefit Plans

Pension Plans

Components of Net Periodic Benefit Expense (Income)

$ in millions	Pension Plans 2022	2021	2020
Service cost, benefits earned during the period	**$ 19**	$ 19	$ 17
Interest cost on projected benefit obligation	**111**	104	121
Expected return on plan assets	**(56)**	(48)	(77)
Net amortization of prior service cost	**1**	1	1
Net amortization of actuarial loss	**25**	34	26
Net periodic benefit expense	**$ 100**	$ 110	$ 88

Certain current and former U.S. employees of the Firm and its U.S. affiliates who were hired before July 1, 2007 are covered by the U.S. pension plan, a non-contributory defined benefit pension plan that is qualified under Section 401(a) of the Internal Revenue Code ("U.S. Qualified Plan"). The U.S. Qualified Plan has ceased future benefit accruals.

Unfunded supplementary plans ("Supplemental Plans") cover certain executives. Liabilities for benefits payable under the Supplemental Plans are accrued by the Firm and are funded when paid. The Morgan Stanley Supplemental Executive Retirement and Excess Plan ("SEREP"), a non-contributory defined benefit plan that is not qualified under Section 401(a) of the Internal Revenue Code, has ceased future benefit accruals.

Certain of the Firm's non-U.S. subsidiaries also have defined benefit pension plans covering their eligible current and former employees.

The Firm's pension plans generally provide pension benefits that are based on each employee's years of credited service and on compensation levels specified in the plans.

Rollforward of Pre-tax AOCI

$ in millions	Pension Plans 2022	2021	2020
Beginning balance	**$ (768)**	$ (691)	$ (877)
Net gain (loss)	**26**	(112)	161
Prior service cost	**—**	—	(2)
Amortization of prior service cost	**1**	1	1
Amortization of net loss	**25**	34	26
Changes recognized in OCI	**52**	(77)	186
Ending balance	**$ (716)**	$ (768)	$ (691)

The Firm generally amortizes into net periodic benefit expense (income) the unrecognized net gains and losses exceeding 10% of the greater of the projected benefit obligation or the market-related value of plan assets. The U.S. pension plans amortize the unrecognized net gains and losses over the average life expectancy of participants. The remaining plans generally amortize the unrecognized net gains and losses and prior service credit over the average remaining service period of active participants.

Weighted Average Assumptions Used to Determine Net Periodic Benefit Expense (Income)

	Pension Plans 2022	2021	2020
Discount rate	**2.80 %**	2.43 %	3.08 %
Expected long-term rate of return on plan assets	**1.71 %**	1.42 %	2.35 %
Rate of future compensation increases	**3.36 %**	3.25 %	3.28 %

The accounting for pension plans involves certain assumptions and estimates. The expected long-term rate of return for the U.S. Qualified Plan was estimated by computing a weighted average of the underlying long-term expected returns based on the investment managers' target allocations.

Benefit Obligation and Funded Status

Rollforward of the Projected Benefit Obligation and Fair Value of Plan Assets

$ in millions	Pension Plans 2022	2021
Rollforward of projected benefit obligation		
Benefit obligation at beginning of year	**$ 4,081**	$ 4,334
Service cost	**19**	19
Interest cost	**111**	104
Actuarial (gain) loss[1]	**(1,064)**	(122)
Plan amendments	**—**	(1)
Plan settlements	**(2)**	(16)
Benefits paid	**(196)**	(217)
Other[2]	**(42)**	(20)
Projected benefit obligation at end of year	**$ 2,907**	$ 4,081
Rollforward of fair value of plan assets		
Fair value of plan assets at beginning of year	**$ 3,605**	$ 3,985
Actual return on plan assets	**(982)**	(186)
Employer contributions	**37**	38
Benefits paid	**(196)**	(217)
Plan settlements	**(2)**	(15)
Other[2]	**(46)**	—
Fair value of plan assets at end of year	**$ 2,416**	$ 3,605
Funded (unfunded) status	**$ (491)**	$ (476)
Amounts recognized in the balance sheet		
Assets	**$ 75**	$ 117
Liabilities	**(566)**	(593)
Net amount recognized	**$ (491)**	$ (476)

1. Primarily reflects the impact of year-over-year discount rate fluctuations and changes in mortality assumptions.
2. Includes the impact of foreign currency exchange rate changes and transfers into plan assets.

Accumulated Benefit Obligation

$ in millions	At December 31, 2022	At December 31, 2021
Pension plans	**$ 2,891**	$ 4,065

Pension Plans with Projected Benefit Obligations in Excess of the Fair Value of Plan Assets

$ in millions	At December 31, 2022	At December 31, 2021
Projected benefit obligation	**$ 2,746**	$ 3,768
Accumulated benefit obligation	**2,731**	3,753
Fair value of plan assets	**2,180**	3,175

The pension plans included in the table above may differ based on their funding status as of December 31 of each year.

Weighted Average Assumptions Used to Determine Projected Benefit Obligation

	Pension Plans	
	At December 31, 2022	At December 31, 2021
Discount rate	**4.93 %**	2.80 %
Rate of future compensation increase	**3.73 %**	3.36 %

The discount rates used to determine the benefit obligation were selected by the Firm, in consultation with its independent actuary. The U.S. pension plans use a pension discount yield curve based on the characteristics of the plans, each determined independently. The pension discount yield curve represents spot discount yields based on duration implicit in a representative broad-based Aa-rated corporate bond universe of high-quality fixed income investments. For all non-U.S. pension plans, the assumed discount rates are based on the nature of liabilities, local economic environments and available bond indices.

Plan Assets

Fair Value of Plan Assets

	At December 31, 2022			
$ in millions	Level 1	Level 2	Level 3	Total
Assets				
Cash and cash equivalents	**$ 4**	**$ —**	**$ —**	**$ 4**
U.S. government and agency securities	**1,788**	**267**	**—**	**2,055**
Corporate and other debt—CDO	**—**	**—**	**—**	**—**
Derivative contracts	**—**	**(2)**	**—**	**(2)**
Other investments	**—**	**—**	**64**	**64**
Other receivables[1]	**—**	**21**	**—**	**21**
Total	**$ 1,792**	**$ 286**	**$ 64**	**$ 2,142**
Assets Measured at NAV				
Commingled trust funds:				
Money market				**44**
Foreign funds:				
Fixed income				**55**
Liquidity				**20**
Targeted cash flow				**158**
Total				**$ 277**
Liabilities				
Other payables[1]	**—**	**(3)**	**—**	**(3)**
Total liabilities	**$ —**	**$ (3)**	**$ —**	**$ (3)**
Fair value of plan assets				**$ 2,416**

	At December 31, 2021			
$ in millions	Level 1	Level 2	Level 3	Total
Assets				
Cash and cash equivalents	$ 9	$ —	$ —	$ 9
U.S. government and agency securities	2,759	314	—	3,073
Corporate and other debt—CDO	—	1	—	1
Derivative contracts	—	3	—	3
Other investments	—	—	65	65
Other receivables[1]	—	2	—	2
Total	$ 2,768	$ 320	$ 65	$ 3,153
Assets Measured at NAV				
Commingled trust funds:				
Money market				33
Foreign funds:				
Fixed income				162
Liquidity				39
Targeted cash flow				235
Total				$ 469
Liabilities				
Other payables[1]	—	(17)	—	(17)
Total liabilities	$ —	$ (17)	$ —	$ (17)
Fair value of plan assets				$ 3,605

1. Other receivables and other payables are valued at their carrying value, which approximates fair value.

Rollforward of Level 3 Plan Assets

$ in millions	2022	2021
Balance at beginning of period	$ 65	$ 61
Realized and unrealized gains	**—**	1
Purchases, sales and settlements, net	**(1)**	3
Balance at end of period	**$ 64**	$ 65

There were no transfers between levels during 2022 and 2021.

The U.S. Qualified Plan assets represent 88% and 86% of the Firm's total pension plan assets at December 31, 2022 and December 2021, respectively. The U.S. Qualified Plan uses a combination of active and risk-controlled fixed income investment strategies. The fixed income asset allocation consists primarily of fixed income securities and related derivative instruments designed to approximate the expected cash flows of the plan's liabilities to help reduce plan exposure to interest rate variation and to better align assets with the obligation. The longer-duration fixed income allocation is expected to help protect the plan's funded status and maintain the stability of plan contributions over the long run. The investment portfolio performance is assessed by comparing actual investment performance with changes in the estimated present value of the U.S. Qualified Plan's benefit obligation.

Derivative instruments are permitted in the U.S. Qualified Plan's investment portfolio only to the extent that they comply with all of the plan's investment policy guidelines and are consistent with the plan's risk and return objectives.

As a fundamental operating principle, any restrictions on the underlying assets apply to the respective derivative product. This includes percentage allocations and credit quality. Derivatives are used solely for the purpose of enhancing

investment returns in the underlying assets and not to circumvent portfolio restrictions.

Plan assets are measured at fair value using valuation techniques that are consistent with the valuation techniques applied to the Firm's major categories of assets and liabilities as described in Notes 2 and 5. OTC derivative contracts consist of investments in interest rate swaps and total return swaps. Other investments consist of insurance contracts held by non-U.S.-based plans. The insurance contracts are valued based on the premium reserve of the insurer for a guarantee that the insurer has given to the employee benefit plan that approximates fair value. The insurance contracts are categorized in Level 3 of the fair value hierarchy.

Commingled trust funds are privately offered funds regulated, supervised and subject to periodic examination by a U.S. federal or state agency and available to institutional clients. The trust must be maintained for the collective investment or reinvestment of assets contributed to it from U.S. tax-qualified employee benefit plans maintained by more than one employer or controlled group of corporations. The sponsor of the commingled trust funds values the funds based on the fair value of the underlying securities. Commingled trust funds are redeemable at NAV at the measurement date or in the near future.

Some non-U.S.-based plans hold foreign funds that consist of investments in fixed income funds, target cash flow funds and liquidity funds. Fixed income funds invest in individual securities quoted on a recognized stock exchange or traded in a regulated market. Certain fixed income funds aim to produce returns consistent with certain Financial Times Stock Exchange indexes. Target cash flow funds are designed to provide a series of fixed annual cash flows achieved by investing in government bonds and derivatives. Liquidity funds place a high priority on capital preservation, stable value and a high liquidity of assets. Foreign funds are readily redeemable at NAV.

The Firm generally considers the NAV of commingled trust funds and foreign funds provided by the fund manager to be the best estimate of fair value.

Expected Contributions

The Firm's policy is to fund at least the amount sufficient to meet minimum funding requirements under applicable employee benefit and tax laws. At December 31, 2022, the Firm expected to contribute approximately $40 million to its pension plans in 2023 based upon the plans' current funded status and expected asset return assumptions for 2023.

Expected Future Benefit Payments

	At December 31, 2022
$ in millions	Pension Plans
2023	**$ 149**
2024	**153**
2025	**159**
2026	**166**
2027	**174**
2028-2032	**937**

401(k) Plans

$ in millions	**2022**	2021	2020
Expense	**$ 355**	$ 357	$ 293

U.S. employees meeting certain eligibility requirements may participate in the Firm's 401(k) plan.

Morgan Stanley 401(k) Plan

Eligible employees receive discretionary 401(k) matching cash contributions as determined annually by the Firm. The Firm matched eligible employee contributions up to the IRS limit at 4%, or 5% up to a certain compensation level, in 2022 and 2021. Eligible employees with eligible pay less than or equal to $100,000 also received a fixed contribution equal to 2% of eligible pay. Transition contributions relating to acquired entities or frozen employee benefit plans were allocated to certain eligible employees through 2020. Contributions are invested among available funds according to each participant's investment direction and are included in the Firm's 401(k) expense.

Non-U.S. Defined Contribution Pension Plans

$ in millions	**2022**	2021	2020
Expense	**$ 163**	$ 149	$ 130

The Firm maintains separate defined contribution pension plans that cover eligible employees of certain non-U.S. subsidiaries. Under such plans, benefits are generally determined based on a fixed rate of base salary with certain vesting requirements.

22. Income Taxes

Components of Provision for Income Taxes

$ in millions	2022	2021	2020
Current			
U.S.:			
Federal	**$ 2,518**	$ 2,554	$ 1,641
State and local	**442**	475	399
Non-U.S.:			
U.K.	**405**	551	395
Japan	**105**	105	185
Hong Kong	**29**	192	185
Other[1]	**260**	667	684
Total	**$ 3,759**	$ 4,544	$ 3,489
Deferred			
U.S.:			
Federal	**$ (803)**	$ (11)	$ (249)
State and local	**(142)**	33	(38)
Non-U.S.:			
U.K.	**55**	(37)	(2)
Japan	**20**	4	12
Hong Kong	**(1)**	(9)	(3)
Other[1]	**22**	24	30
Total	**$ (849)**	$ 4	$ (250)
Provision for income taxes	**$ 2,910**	$ 4,548	$ 3,239

1. Other Non-U.S. tax provisions for 2022, 2021 and 2020 primarily include Brazil, Singapore and the Netherlands.

Reconciliation of the U.S. Federal Statutory Income Tax Rate to the Effective Income Tax Rate

	2022	2021	2020
U.S. federal statutory income tax rate	**21.0 %**	21.0 %	21.0 %
U.S. state and local income taxes, net of U.S. federal income tax benefits	**1.8**	2.1	2.0
Domestic tax credits and tax exempt income	**(0.9)**	(0.6)	(0.8)
Non-U.S. earnings	**0.8**	1.4	1.7
Employee share-based awards	**(1.7)**	(0.6)	(0.7)
Other	**(0.3)**	(0.2)	(0.7)
Effective income tax rate	**20.7 %**	23.1 %	22.5 %

Deferred Tax Assets and Liabilities

$ in millions	At December 31, 2022	At December 31, 2021
Gross deferred tax assets		
Net operating loss and tax credit carryforwards	**$ 288**	$ 276
Employee compensation and benefit plans	**2,487**	2,430
Allowance for credit losses and other reserves	**595**	599
Valuation of net trading inventory, investments and receivables	**1,743**	474
Other	**35**	15
Total deferred tax assets	**5,148**	3,794
Less: Deferred tax assets valuation allowance	**205**	208
Deferred tax assets after valuation allowance	**$ 4,943**	$ 3,586
Gross deferred tax liabilities		
Fixed assets	**807**	1,287
Intangibles and goodwill	**2,019**	2,046
Total deferred tax liabilities	**$ 2,826**	$ 3,333
Net deferred tax assets	**$ 2,117**	$ 253

Deferred income taxes reflect the net tax effects of temporary differences between the financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when such differences are expected to reverse.

The Firm believes the recognized net deferred tax assets (after valuation allowance) at December 31, 2022 are more likely than not to be realized based on expectations as to future taxable income in the jurisdictions in which it operates.

The earnings of certain foreign subsidiaries and affiliates are indefinitely reinvested due to regulatory and other capital requirements in foreign jurisdictions. As of December 31, 2022, the unrecognized deferred tax liability attributable to indefinitely reinvested earnings is $429 million.

Rollforward of Unrecognized Tax Benefits

$ in millions	2022	2021	2020
Balance at beginning of period	$ 971	$ 755	$ 755
Increases based on tax positions related to the current period	**256**	201	139
Increases based on tax positions related to prior periods	**64**	74	178
Increases based on the acquisition of E*TRADE	**—**	—	26
Decreases based on tax positions related to prior periods	**(134)**	(37)	(297)
Decreases related to settlements with taxing authorities	**(6)**	(10)	(36)
Decreases related to lapse of statute of limitations	**(22)**	(12)	(10)
Balance at end of period	**$ 1,129**	$ 971	$ 755
Net unrecognized tax benefits[1]	**$ 1,007**	$ 860	$ 665

1. Represent ending unrecognized tax benefits adjusted for the impact of the federal benefit of state issues, competent authority arrangements and foreign tax credit offsets. If recognized, these net benefits would favorably impact the effective tax rate in future periods.

It is reasonably possible that significant changes in the balance of unrecognized tax benefits may occur within the next 12 months. At this time, however, it is not possible to

reasonably estimate the expected change to the total amount of unrecognized tax benefits and the impact on the Firm's effective tax rate over the next 12 months.

Interest Expense (Benefit) Associated with Unrecognized Tax Benefits, Net of Federal and State Income Tax Benefits

$ in millions	2022	2021	2020
Recognized in income statement	$ 39	$ 14	$ 56
Accrued at end of period	175	142	134

Interest and penalties related to unrecognized tax benefits are recognized as a component of the provision for income taxes. Penalties related to unrecognized tax benefits for the years mentioned above were immaterial.

Earliest Tax Year Subject to Examination in Major Tax Jurisdictions

Jurisdiction	Tax Year
U.S.	2017
New York State and New York City	2010
U.K.	2011
Japan	2018
Hong Kong	2016

The Firm is routinely under examination by the IRS and other tax authorities in certain countries, such as Japan and the U.K., and in states and localities in which it has significant business operations, such as New York.

The Firm believes that the resolution of these tax examinations will not have a material effect on the annual financial statements, although a resolution could have a material impact in the income statement and on the effective tax rate for any period in which such resolutions occur.

23. Segment, Geographic and Revenue Information

The Firm structures its segments primarily based upon the nature of the financial products and services provided to customers and its management organization. The Firm provides a wide range of financial products and services to its customers in each of its business segments: Institutional Securities, Wealth Management and Investment Management. For a further discussion of the business segments, see Note 1.

Revenues and expenses directly associated with each respective business segment are included in determining its operating results. Other revenues and expenses that are not directly attributable to a particular business segment are generally allocated based on each business segment's respective net revenues, non-interest expenses or other relevant measures.

As a result of revenues and expenses from transactions with other operating segments being treated as transactions with external parties for purposes of segment disclosures, the Firm includes an Intersegment Eliminations category to reconcile the business segment results to the consolidated results.

Selected Financial Information by Business Segment

	2022				
$ in millions	IS	WM	IM	I/E	Total
Investment banking	$ 5,235	$ 438	$ —	$ (74)	$ 5,599
Trading	14,318	(432)	(11)	53	13,928
Investments	(156)	51	120	—	15
Commissions and fees[1]	2,756	2,467	—	(285)	4,938
Asset management[1, 2]	580	13,872	5,332	(206)	19,578
Other	(295)	592	(2)	(12)	283
Total non-interest revenues	22,438	16,988	5,439	(524)	44,341
Interest income	13,276	9,579	56	(1,316)	21,595
Interest expense	11,321	2,150	120	(1,323)	12,268
Net interest	1,955	7,429	(64)	7	9,327
Net revenues	$ 24,393	$ 24,417	$ 5,375	$ (517)	$ 53,668
Provision for credit losses	$ 211	$ 69	$ —	$ —	$ 280
Compensation and benefits	8,246	12,534	2,273	—	23,053
Non-compensation expenses	9,221	5,231	2,295	(501)	16,246
Total non-interest expenses	$ 17,467	$ 17,765	$ 4,568	$ (501)	$ 39,299
Income before provision for income taxes	$ 6,715	$ 6,583	$ 807	$ (16)	$ 14,089
Provision for income taxes	1,308	1,444	162	(4)	2,910
Net income	5,407	5,139	645	(12)	11,179
Net income applicable to noncontrolling interests	165	—	(15)	—	150
Net income applicable to Morgan Stanley	$ 5,242	$ 5,139	$ 660	$ (12)	$ 11,029

	2021				
$ in millions	IS	WM	IM	I/E	Total
Investment banking	$ 10,272	$ 822	$ —	$ (100)	$ 10,994
Trading	12,353	418	(53)	92	12,810
Investments	607	48	721	—	1,376
Commissions and fees[1]	2,878	3,019	1	(377)	5,521
Asset management[1, 2]	583	13,966	5,576	(158)	19,967
Other	495	577	(20)	(10)	1,042
Total non-interest revenues	27,188	18,850	6,225	(553)	51,710
Interest income	3,752	5,821	31	(193)	9,411
Interest expense	1,107	428	36	(205)	1,366
Net interest	2,645	5,393	(5)	12	8,045
Net revenues	$ 29,833	$ 24,243	$ 6,220	$ (541)	$ 59,755
Provision for credit losses	$ (7)	$ 11	$ —	$ —	$ 4
Compensation and benefits	9,165	13,090	2,373	—	24,628
Non-compensation expenses	8,861	4,961	2,169	(536)	15,455
Total non-interest expenses	$ 18,026	$ 18,051	$ 4,542	$ (536)	$ 40,083
Income before provision for income taxes	$ 11,814	$ 6,181	$ 1,678	$ (5)	$ 19,668
Provision for income taxes	2,746	1,447	356	(1)	4,548
Net income	9,068	4,734	1,322	(4)	15,120
Net income applicable to noncontrolling interests	111	—	(25)	—	86
Net income applicable to Morgan Stanley	$ 8,957	$ 4,734	$ 1,347	$ (4)	$ 15,034

$ in millions	2020 IS	2020 WM	2020 IM	2020 I/E	2020 Total
Investment banking	$ 7,204	$ 559	$ —	$ (89)	$ 7,674
Trading	13,097	844	(34)	76	13,983
Investments	166	12	808	—	986
Commissions and fees[1]	2,935	2,291	1	(376)	4,851
Asset management[1,2]	461	10,955	3,013	(157)	14,272
Other	323	403	(39)	(9)	678
Total non-interest revenues	24,186	15,064	3,749	(555)	42,444
Interest income	5,809	4,771	14	(432)	10,162
Interest expense	3,519	749	29	(448)	3,849
Net interest	2,290	4,022	(15)	16	6,313
Net revenues	$ 26,476	$ 19,086	$ 3,734	$ (539)	$ 48,757
Provision for credit losses	$ 731	$ 30	$ —	$ —	$ 761
Compensation and benefits	8,342	10,970	1,542	—	20,854
Non-compensation expenses	8,252	3,699	1,322	(549)	12,724
Total non-interest expenses	$ 16,594	$ 14,669	$ 2,864	$ (549)	$ 33,578
Income before provision for income taxes	$ 9,151	$ 4,387	$ 870	$ 10	$ 14,418
Provision for income taxes	2,040	1,026	171	2	3,239
Net income	7,111	3,361	699	8	11,179
Net income applicable to noncontrolling interests	99	—	84	—	183
Net income applicable to Morgan Stanley	$ 7,012	$ 3,361	$ 615	$ 8	$ 10,996

1. Substantially all revenues are from contracts with customers.
2. Includes certain fees that may relate to services performed in prior periods.

Detail of Investment Banking Revenues

$ in millions	**2022**	2021	2020
Institutional Securities—Advisory	**$ 2,946**	$ 3,487	$ 2,008
Institutional Securities—Underwriting	**2,289**	6,785	5,196
Firm Investment banking revenues from contracts with customers	**90 %**	91 %	92 %

Trading Revenues by Product Type

$ in millions	**2022**	2021	2020
Interest rate	**$ 2,808**	$ 740	$ 2,978
Foreign exchange	**1,585**	1,008	902
Equity[1]	**7,515**	7,331	6,200
Commodity and other	**1,466**	2,599	1,762
Credit	**554**	1,132	2,141
Total	**$ 13,928**	$ 12,810	$ 13,983

1. Dividend income is included within equity contracts.

The previous table summarizes realized and unrealized gains and losses, from derivative and non-derivative financial instruments, included in Trading revenues in the income statement. The Firm generally utilizes financial instruments across a variety of product types in connection with its market-making and related risk management strategies. The trading revenues presented in the table are not representative of the manner in which the Firm manages its business activities and are prepared in a manner similar to the presentation of trading revenues for regulatory reporting purposes.

Investment Management Investments Revenues—Net Cumulative Unrealized Carried Interest

$ in millions	**At December 31, 2022**	At December 31, 2021
Net cumulative unrealized performance-based fees at risk of reversing	**$ 819**	$ 802

The Firm's portion of net cumulative performance-based fees in the form of unrealized carried interest, for which the Firm is not obligated to pay compensation, is at risk of reversing when the return in certain funds fall below specified performance targets. See Note 15 for information regarding general partner guarantees, which include potential obligations to return performance fee distributions previously received.

Investment Management Asset Management Revenues—Reduction of Fees Due to Fee Waivers

$ in millions	**2022**	2021	2020
Fee waivers	**$ 211**	$ 516	$ 135

The Firm waives a portion of its fees in the Investment Management business segment from certain registered money market funds that comply with the requirements of Rule 2a-7 of the Investment Company Act of 1940.

Certain Other Fee Waivers

Separately, the Firm's employees, including its senior officers, may participate on the same terms and conditions as other investors in certain funds that the Firm sponsors primarily for client investment, and the Firm may waive or lower applicable fees and charges for its employees.

Other Expenses—Transaction Taxes

$ in millions	**2022**	2021	2020
Transaction taxes	**$ 910**	$ 969	$ 699

Transaction taxes are composed of securities transaction taxes and stamp duties, which are levied on the sale or purchase of securities listed on recognized stock exchanges in certain markets. These taxes are imposed mainly on trades of equity securities in Asia and EMEA. Similar transaction taxes are levied on trades of listed derivative instruments in certain countries.

Net Revenues by Region

$ in millions	2022	2021	2020
Americas	$ 40,117	$ 44,605	$ 35,459
EMEA	6,811	7,699	6,549
Asia	6,740	7,451	6,749
Total	$ 53,668	$ 59,755	$ 48,757

Income before Provision for Income Taxes

$ in millions	2022	2021	2020
U.S.	$ 9,363	$ 14,082	$ 10,027
Non-U.S.[1]	4,726	5,586	4,391
Total	$ 14,089	$ 19,668	$ 14,418

1. Non-U.S. income is defined as income generated from operations located outside the U.S.

The Firm operates in both U.S. and non-U.S. markets. The Firm's non-U.S. business activities are principally conducted and managed through EMEA and Asia locations. The net revenues disclosed in the previous table reflect the regional view of the Firm's consolidated net revenues on a managed basis, based on the following methodology:

Institutional Securities: Client location for advisory and equity underwriting, syndicate desk location for debt underwriting, trading desk location for sales and trading.

Wealth Management: Americas, where representatives operate.

Investment Management: Client location, except certain closed-end funds, which are based on asset location.

Revenues Recognized from Prior Services

$ in millions	2022	2021	2020
Non-interest revenues	$ 2,538	$ 2,391	$ 2,298

The previous table includes revenues from contracts with customers recognized where some or all services were performed in prior periods. For the years ended December 31, 2022 and 2021, these revenues primarily include investment banking advisory fees, and for the year ended December 31, 2020, these revenues primarily include investment banking advisory fees and distribution fees.

Receivables from Contracts with Customers

$ in millions	At December 31, 2022	At December 31, 2021
Customer and other receivables	$ 2,577	$ 3,591

Receivables from contracts with customers, which are included within Customer and other receivables in the balance sheet, arise when the Firm has both recorded revenues and the right per the contract to bill the customer.

Assets by Business Segment

$ in millions	At December 31, 2022	At December 31, 2021
Institutional Securities	$ 789,837	$ 792,135
Wealth Management	373,305	378,438
Investment Management	17,089	17,567
Total[1]	$ 1,180,231	$ 1,188,140

1. Parent assets have been fully allocated to the business segments.

Total Assets by Region

$ in millions	At December 31, 2022	At December 31, 2021
Americas	$ 853,228	$ 848,001
EMEA	197,397	204,083
Asia	129,606	136,056
Total	$ 1,180,231	$ 1,188,140

24. Parent Company

Parent Company Only—Condensed Income Statement and Comprehensive Income Statement

$ in millions	2022	2021	2020
Revenues			
Dividends from bank subsidiaries	$ 2,875	$ —	$ 2,811
Dividends from BHC and non-bank subsidiaries	8,661	8,898	1,170
Total dividends from subsidiaries	11,536	8,898	3,981
Trading	(1,143)	229	(244)
Other	170	4	51
Total non-interest revenues	10,563	9,131	3,788
Interest income	5,805	2,648	3,666
Interest expense	6,162	2,822	3,087
Net interest	(357)	(174)	579
Net revenues	10,206	8,957	4,367
Non-interest expenses	252	443	387
Income before income taxes	9,954	8,514	3,980
Provision for (benefit from) income taxes	(456)	(203)	(109)
Net income before undistributed gain of subsidiaries	10,410	8,717	4,089
Undistributed gain of subsidiaries	619	6,317	6,907
Net income	11,029	15,034	10,996
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	(202)	(207)	102
Change in net unrealized gains (losses) on available-for-sale securities	(4,437)	(1,542)	1,580
Pensions and other	43	(53)	146
Change in net debt valuation adjustment	1,449	662	(1,002)
Net change in cash flow hedges	(4)	—	—
Comprehensive income	$ 7,878	$ 13,894	$ 11,822
Net income	$ 11,029	$ 15,034	$ 10,996
Preferred stock dividends and other	489	468	496
Earnings applicable to Morgan Stanley common shareholders	$ 10,540	$ 14,566	$ 10,500

Parent Company Only—Condensed Balance Sheet

$ in millions, except share data	At December 31, 2022	At December 31, 2021
Assets		
Cash and cash equivalents	**$ 25,333**	$ 15,342
Trading assets at fair value	**10,391**	5,298
Investment securities (includes **$17,409** and $21,246 at fair value; **$27,226** and $16,573 were pledged to various parties)	**36,676**	39,707
Securities purchased under agreement to resell to affiliates	**22,987**	21,116
Advances to subsidiaries:		
Bank and BHC	**76,232**	59,757
Non-bank	**93,593**	96,202
Equity investments in subsidiaries:		
Bank and BHC	**59,676**	69,059
Non-bank	**50,366**	48,481
Other assets	**2,071**	1,109
Total assets	**$ 377,325**	$ 356,071
Liabilities		
Trading liabilities at fair value	**$ 262**	$ 1,688
Securities sold under agreements to repurchase from affiliates	**28,682**	16,928
Payables to and advances from	**76,170**	59,960
Other liabilities and accrued expenses	**2,282**	1,859
Borrowings (includes **$12,122** and $15,894 at fair value)	**169,788**	170,195
Total liabilities	**277,184**	250,630
Commitments and contingent liabilities (see Note 15)		
Equity		
Preferred stock	**8,750**	7,750
Common stock, $0.01 par value:		
Shares authorized: **3,500,000,000**; Shares issued: **2,038,893,979**; Shares outstanding: **1,675,487,409** and 1,772,226,530	**20**	20
Additional paid-in capital	**29,339**	28,841
Retained earnings	**94,862**	89,432
Employee stock trusts	**4,881**	3,955
Accumulated other comprehensive income (loss)	**(6,253)**	(3,102)
Common stock held in treasury at cost, $0.01 par value (**363,406,570** and 266,667,449 shares)	**(26,577)**	(17,500)
Common stock issued to employee stock trusts	**(4,881)**	(3,955)
Total shareholders' equity	**100,141**	105,441
Total liabilities and equity	**$ 377,325**	$ 356,071

Parent Company Only—Condensed Cash Flow Statement

$ in millions	2022	2021	2020
Net cash provided by (used for) operating activities	**$(13,064)**	$ 4,257	$ 14,202
Cash flows from investing activities			
Proceeds from (payments for):			
AFS securities[1]:			
Purchases	**(1,855)**	(6,275)	(4,575)
Proceeds from sales	**676**	2,611	2,013
Proceeds from paydowns and maturities	**3,814**	1,940	2,759
HTM securities[1]:			
Purchases	**(4,228)**	(3,022)	(4,735)
Proceeds from paydowns and maturities	**3,434**	3,696	2,892
Securities purchased under agreements to resell with affiliates	**(1,871)**	13,581	(24,584)
Securities sold under agreements to repurchase with affiliates	**11,755**	(7,422)	19,719
Advances to and investments in subsidiaries	**(10,574)**	(17,083)	(13,832)
Net cash provided by (used for) investing activities	**1,151**	(11,974)	(20,343)
Cash flows from financing activities			
Proceeds from:			
Issuance of preferred stock, net of issuance costs	**994**	1,275	—
Issuance of Borrowings	**34,431**	42,098	25,587
Payments for:			
Borrowings	**(14,441)**	(28,592)	(22,105)
Repurchases of common stock and employee tax withholdings	**(10,871)**	(12,075)	(1,890)
Cash dividends	**(5,401)**	(4,171)	(2,739)
Net change in advances from subsidiaries	**16,707**	17,042	7,194
Other financing activities	**—**	—	(498)
Net cash provided by (used for) financing activities	**21,419**	15,577	5,549
Effect of exchange rate changes on cash and cash equivalents	**485**	380	(316)
Net increase (decrease) in cash and cash equivalents	**9,991**	8,240	(908)
Cash and cash equivalents, at beginning of period	**15,342**	7,102	8,010
Cash and cash equivalents, at end of period	**$ 25,333**	$ 15,342	$ 7,102
Cash and cash equivalents:			
Cash and due from banks	**$ 75**	$ 100	$ 20
Deposits with bank subsidiaries	**25,258**	15,242	7,082
Cash and cash equivalents, at end of period	**$ 25,333**	$ 15,342	$ 7,102
Restricted cash	**$ 836**	$ 441	$ 381

Supplemental Disclosure of Cash Flow Information			
Cash payments for:			
Interest	**$ 5,955**	$ 2,970	$ 3,472
Income taxes, net of refunds[2]	**3,132**	2,775	1,364

1. The prior period amounts have been revised to present Purchases, Proceeds from sales and Proceeds from paydowns and maturities separately between AFS securities and HTM securities.
2. Represents total payments, net of refunds, made to various tax authorities and includes taxes paid on behalf of certain subsidiaries that are subsequently settled between the Parent Company and these subsidiaries. The settlements received from subsidiaries were $2.6 billion, $3.0 billion and $1.6 billion for 2022, 2021 and 2020, respectively.

For information on the Parent Company's preferred stock, see Note 18.

Parent Company's Borrowings with Original Maturities Greater than One Year

$ in millions	At December 31, 2022	At December 31, 2021
Senior	**$ 157,585**	$ 155,304
Subordinated	**12,203**	13,591
Total	**$ 169,788**	$ 168,895

Transactions with Subsidiaries

The Parent Company has transactions with its consolidated subsidiaries determined on an agreed-upon basis and has guaranteed certain unsecured lines of credit and contractual obligations on certain of its consolidated subsidiaries.

Guarantees

In the normal course of its business, the Parent Company guarantees certain of its subsidiaries' obligations on a transaction-by-transaction basis under various financial arrangements. The Parent Company has issued guarantees on behalf of its subsidiaries to various U.S. and non-U.S. exchanges and clearinghouses that trade and clear securities and/or futures contracts. Under these guarantee arrangements, the Parent Company may be required to pay the financial obligations of its subsidiaries related to business transacted on or with the exchanges and clearinghouses in the event of a subsidiary's default on its obligations to the exchange or the clearinghouse. The Parent Company has not recorded any contingent liability in its condensed financial statements for these arrangements and believes that any potential requirements to make payments under these arrangements are remote.

The Parent Company also, in the normal course of business, provides standard indemnities to counterparties on behalf of its subsidiaries for taxes, including U.S. and foreign withholding taxes, on interest and other payments made on derivatives, securities and stock lending transactions, and certain annuity products, and may also provide indemnities to or on behalf of affiliates from time to time for other arrangements. These indemnity payments could be required, as applicable, based on a change in the tax laws, change in interpretation of applicable tax rulings or claims arising from contractual relationships between affiliates. Certain contracts contain provisions that enable the Parent Company to terminate the agreement upon the occurrence of such events. The maximum potential amount of future payments that the Parent Company could be required to make under these indemnifications cannot be estimated. The Parent Company has not recorded any contingent liability in its condensed financial statements for these indemnifications and believes that the occurrence of any events that would trigger payments under these contracts is remote.

Guarantees of Debt Instruments and Warrants Issued by Subsidiaries

$ in millions	At December 31, 2022	At December 31, 2021
Aggregate balance	**$ 51,136**	$ 47,129

Guarantees under Subsidiary Lease Obligations

$ in millions	At December 31, 2022	At December 31, 2021
Aggregate balance[1]	**$ 615**	$ 610

1. Amounts primarily relate to the U.K.

Finance Subsidiary

The Parent Company fully and unconditionally guarantees the securities issued by Morgan Stanley Finance LLC, a wholly owned finance subsidiary. No other subsidiary of the Parent Company guarantees these securities.

Resolution and Recovery Planning

As indicated in the Firm's 2021 targeted resolution plan submitted to the Federal Reserve and the FDIC, the Parent Company has entered into an amended and restated support agreement with its material entities (including its wholly owned, direct subsidiary Morgan Stanley Holdings LLC (the "Funding IHC")) and certain other subsidiaries. Under the amended and restated secured support agreement, in the event of a resolution scenario, the Parent Company would be obligated to contribute all of its contributable assets to its supported entities and/or the Funding IHC. The Funding IHC would be obligated to provide capital and liquidity, as applicable, to its supported entities. The obligations of the Parent Company and the Funding IHC under the amended and restated support agreement are in most cases secured on a senior basis by the assets of the Parent Company (other than shares in subsidiaries of the Parent Company and certain other assets) and the assets of the Funding IHC.

Financial Data Supplement (Unaudited)

Morgan Stanley

Average Balances and Interest Rates and Net Interest Income

$ in millions	2022 Average Daily Balance	2022 Interest	2022 Average Rate	2021 Average Daily Balance	2021 Interest	2021 Average Rate
Interest earning assets						
Investment securities[1]	**$ 167,494**	**$ 3,066**	**1.8 %**	$182,896	$ 2,759	1.5 %
Loans[1]	**205,069**	**6,988**	**3.4**	166,675	4,209	2.5
Securities purchased under agreements to resell[2]:						
U.S.	**57,565**	**1,643**	**2.9**	55,274	86	0.2
Non-U.S.	**62,585**	**545**	**0.9**	53,323	(267)	(0.5)
Securities borrowed[3]:						
U.S.	**123,288**	**1,039**	**0.8**	99,667	(825)	(0.8)
Non-U.S.	**19,345**	**(19)**	**(0.1)**	17,387	(192)	(1.1)
Trading assets, net of Trading liabilities[4]:						
U.S.	**74,932**	**2,068**	**2.8**	77,916	1,644	2.1
Non-U.S.	**14,748**	**416**	**2.8**	19,559	394	2.0
Customer receivables and Other[5]:						
U.S.	**113,929**	**4,490**	**3.9**	135,005	1,409	1.0
Non-U.S.	**73,943**	**1,359**	**1.8**	74,068	194	0.3
Total	**$ 912,898**	**$21,595**	**2.4 %**	$881,770	$ 9,411	1.1 %
Interest bearing liabilities						
Deposits[1]	**$ 340,741**	**$ 1,825**	**0.5 %**	$325,500	$ 409	0.1 %
Borrowings[1, 6]	**229,255**	**5,054**	**2.2**	224,657	2,725	1.2
Securities sold under agreements to repurchase[7,9]:						
U.S.	**21,481**	**1,086**	**5.1**	29,383	157	0.5
Non-U.S.	**39,631**	**674**	**1.7**	27,374	(64)	(0.2)
Securities loaned[8,9]:						
U.S.	**6,277**	**37**	**0.6**	4,816	29	0.6
Non-U.S.	**7,669**	**466**	**6.1**	5,514	372	6.7
Customer payables and Other[10]:						
U.S.	**143,448**	**1,991**	**1.4**	132,899	(1,825)	(1.4)
Non-U.S.	**73,291**	**1,135**	**1.5**	76,185	(437)	(0.6)
Total	**$ 861,793**	**$12,268**	**1.4 %**	$826,328	$ 1,366	0.2 %
Net interest income and net interest rate spread		**$ 9,327**	**1.0 %**		$ 8,045	0.9 %

Effect of Volume and Rate Changes on Net Interest Income

	2022 versus 2021		
	Increase (Decrease) Due to Change in:		
$ in millions	Volume	Rate	Net Change
Interest earning assets			
Investment securities[1]	**$ (232)**	**$ 539**	**$ 307**
Loans[1]	**970**	**1,809**	**2,779**
Securities purchased under agreements to resell[2]:			
U.S.	**4**	**1,553**	**1,557**
Non-U.S.	**(46)**	**858**	**812**
Securities borrowed[3]:			
U.S.	**(196)**	**2,060**	**1,864**
Non-U.S.	**(22)**	**195**	**173**
Trading assets, net of Trading liabilities[4]:			
U.S.	**(63)**	**487**	**424**
Non-U.S.	**(97)**	**119**	**22**
Customer receivables and Other[5]:			
U.S.	**(220)**	**3,301**	**3,081**
Non-U.S.	**—**	**1,165**	**1,165**
Change in interest income	**$ 98**	**$ 12,086**	**$ 12,184**
Interest bearing liabilities			
Deposits[1]	**$ 19**	**$ 1,397**	**$ 1,416**
Borrowings[1,6]	**56**	**2,273**	**2,329**
Securities sold under agreements to repurchase[7,9]:			
U.S.	**(42)**	**971**	**929**
Non-U.S.	**(29)**	**767**	**738**
Securities loaned[8,9]:			
U.S.	**9**	**(1)**	**8**
Non-U.S.	**145**	**(51)**	**94**
Customer payables and Other[10]:			
U.S.	**(145)**	**3,961**	**3,816**
Non-U.S.	**17**	**1,555**	**1,572**
Change in interest expense	**$ 30**	**$ 10,872**	**$ 10,902**
Change in net interest income	**$ 68**	**$ 1,214**	**$ 1,282**

Table of Contents

Average Balances and Interest Rates and Net Interest Income

$ in millions	2020 Average Daily Balance	Interest	Average Rate
Interest earning assets			
Investment securities[1]	$ 136,502	$ 2,282	1.7 %
Loans[1]	143,350	4,142	2.9
Securities purchased under agreements to resell[2]:			
U.S.	44,964	545	1.2
Non-U.S.	42,064	(87)	(0.2)
Securities borrowed[3]:			
U.S.	85,561	(490)	(0.6)
Non-U.S.	17,035	(162)	(1.0)
Trading assets, net of Trading liabilities[4]:			
U.S.	76,273	2,000	2.6
Non-U.S.	22,604	417	1.8
Customer receivables and Other[5]:			
U.S.	87,775	1,188	1.4
Non-U.S.	63,301	327	0.5
Total	$ 719,429	$ 10,162	1.4 %
Interest bearing liabilities			
Deposits[1]	$ 241,487	$ 953	0.4 %
Borrowings[1,6]	202,498	3,250	1.6
Securities sold under agreements to repurchase[7,9]:			
U.S.	27,085	483	1.8
Non-U.S.	21,752	81	0.4
Securities loaned[8,9]:			
U.S.	2,898	49	1.7
Non-U.S.	6,611	370	5.6
Customer payables and Other[10]:			
U.S.	125,982	(1,176)	(0.9)
Non-U.S.	64,958	(161)	(0.2)
Total	$ 693,271	$ 3,849	0.6 %
Net interest income and net interest rate spread		$ 6,313	0.8 %

Effect of Volume and Rate Changes on Net Interest Income

$ in millions	2021 versus 2020 Increase (Decrease) Due to Change in: Volume	Rate	Net Change
Interest earning assets			
Investment securities[1]	$ 776	$ (299)	$ 477
Loans[1]	674	(607)	67
Securities purchased under agreements to resell[2]:			
U.S.	125	(584)	(459)
Non-U.S.	(23)	(157)	(180)
Securities borrowed[3]:			
U.S.	(81)	(254)	(335)
Non-U.S.	(3)	(27)	(30)
Trading assets, net of Trading liabilities[4]:			
U.S.	43	(399)	(356)
Non-U.S.	(56)	33	(23)
Customer receivables and Other[5]:			
U.S.	639	(418)	221
Non-U.S.	56	(189)	(133)
Change in interest income	$ 2,150	$ (2,901)	$ (751)
Interest bearing liabilities			
Deposits[1]	$ 332	$ (876)	$ (544)
Borrowings[1,6]	356	(881)	(525)
Securities sold under agreements to repurchase[7,9]:			
U.S.	41	(367)	(326)
Non-U.S.	21	(166)	(145)
Securities loaned[8,9]:			
U.S.	32	(52)	(20)
Non-U.S.	(61)	63	2
Customer payables and Other[10]:			
U.S.	(65)	(584)	(649)
Non-U.S.	(28)	(248)	(276)
Change in interest expense	$ 628	$ (3,111)	$ (2,483)
Change in net interest income	$ 1,522	$ 210	$ 1,732

1. Amounts include primarily U.S. balances.
2. Includes interest paid on Securities purchased under agreements to resell.
3. Includes fees paid on Securities borrowed.
4. Excludes non-interest earning assets and non-interest bearing liabilities, such as equity securities.
5. Includes Cash and cash equivalents.
6. Average daily balance includes borrowings carried at fair value, but for certain borrowings, interest expense is considered part of fair value and is recorded in Trading revenues.
7. Includes interest received on Securities sold under agreements to repurchase.
8. Includes fees received on Securities loaned.
9. The annualized average rate was calculated using (a) interest expense incurred on all securities sold under agreements to repurchase and securities loaned transactions, whether or not such transactions were reported in the balance sheet and (b) net average on-balance sheet balances, which exclude certain securities-for-securities transactions.
10. Includes fees received from Equity Financing customers related to their short transactions, which can be under either margin or securities lending arrangements.

Deposits

$ in millions	**2022** Average Amount	**2022** Average Rate	2021 Average Amount	2021 Average Rate	2020 Average Amount	2020 Average Rate
Deposits[1]:						
Savings	**$321,316**	**0.4 %**	$304,664	— %	$202,035	0.1 %
Time	**19,425**	**2.7 %**	20,836	1.7 %	39,452	1.8 %
Total	**$340,741**	**0.5 %**	$325,500	0.1 %	$241,487	0.4 %

Average Daily Deposits

1. The Firm's deposits were primarily held in U.S. offices.

Glossary of Common Terms and Acronyms

ABS	Asset-backed securities
ACL	Allowance for credit losses
AFS	Available-for-sale
AML	Anti-money laundering
AOCI	Accumulated other comprehensive income (loss)
AUM	Assets under management or supervision
Balance sheet	Consolidated balance sheet
BHC	Bank holding company
bps	Basis points; one basis point equals 1/100th of 1%
Cash flow statement	Consolidated cash flow statement
CCAR	Comprehensive Capital Analysis and Review
CCyB	Countercyclical capital buffer
CDO	Collateralized debt obligation(s), including Collateralized loan obligation(s)
CDS	Credit default swaps
CECL	Current Expected Credit Losses, as calculated under the Financial Instruments—Credit Losses accounting update
CFTC	U.S. Commodity Futures Trading Commission
CLN	Credit-linked note(s)
CLO	Collateralized loan obligation(s)
CMBS	Commercial mortgage-backed securities
CMO	Collateralized mortgage obligation(s)
CRM	Credit Risk Management Department
CTA	Cumulative foreign currency translation
CVA	Credit valuation adjustment
DVA	Debt valuation adjustment
EBITDA	Earnings before interest, taxes, depreciation and amortization
ELN	Equity-linked note(s)
EMEA	Europe, Middle East and Africa
EPS	Earnings per common share
E.U.	European Union
FDIC	Federal Deposit Insurance Corporation
FFELP	Federal Family Education Loan Program
FHC	Financial holding company
FICC	Fixed Income Clearing Corporation
FICO	Fair Isaac Corporation
Financial statement	Consolidated financial statements
FVA	Funding valuation adjustment
FVO	Fair value option
G-SIB	Global systemically important banks
HELOC	Home Equity Line of Credit
HFI	Held-for-investment
HFS	Held-for-sale
HQLA	High-quality liquid assets
HTM	Held-to-maturity
I/E	Intersegment eliminations
IHC	Intermediate holding company
IM	Investment Management
Income statement	Consolidated income statement
IRS	Internal Revenue Service
IS	Institutional Securities
LCR	Liquidity coverage ratio, as adopted by the U.S. banking agencies
LIBOR	London Interbank Offered Rate
LTV	Loan-to-value
M&A	Merger, acquisition and restructuring transaction
MSBNA	Morgan Stanley Bank, N.A.
MS&Co.	Morgan Stanley & Co. LLC
MSCG	Morgan Stanley Capital Group Inc.
MSCS	Morgan Stanley Capital Services LLC
MSESE	Morgan Stanley Europe SE
MSIP	Morgan Stanley & Co. International plc
MSMS	Morgan Stanley MUFG Securities Co., Ltd.
MSPBNA	Morgan Stanley Private Bank, National Association
MSSB	Morgan Stanley Smith Barney LLC
MUFG	Mitsubishi UFJ Financial Group, Inc.
MUMSS	Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.
MWh	Megawatt hour
N/A	Not Applicable
N/M	Not Meaningful
NAV	Net asset value
Non-GAAP	Non-generally accepted accounting principles
NSFR	Net stable funding ratio, as adopted by the U.S. banking agencies
OCC	Office of the Comptroller of the Currency
OCI	Other comprehensive income (loss)
OIS	Overnight index swap
OTC	Over-the-counter
PRA	Prudential Regulation Authority
PSU	Performance-based stock unit
RMBS	Residential mortgage-backed securities
ROE	Return on average common equity
ROTCE	Return on average tangible common equity
ROU	Right-of-use
RSU	Restricted stock unit
RWA	Risk-weighted assets
SCB	Stress capital buffer
SEC	U.S. Securities and Exchange Commission
SLR	Supplementary leverage ratio
SOFR	Secured Overnight Financing Rate
S&P	Standard & Poor's
SPE	Special purpose entity
SPOE	Single point of entry
TDR	Troubled debt restructuring
TLAC	Total loss-absorbing capacity
U.K.	United Kingdom
UPB	Unpaid principal balance
U.S.	United States of America
U.S. GAAP	Accounting principles generally accepted in the United States of America
VaR	Value-at-Risk
VIE	Variable interest entity
WACC	Implied weighted average cost of capital
WM	Wealth Management

Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Controls and Procedures

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Under the supervision and with the participation of the Firm's management, including the Chief Executive Officer and Chief Financial Officer, the Firm conducted an evaluation of the effectiveness of the Firm's disclosure controls and procedures (as defined in Rule 13a-15(e) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")). Based on this evaluation, the Chief Executive Officer and Chief Financial Officer concluded that the Firm's disclosure controls and procedures were effective as of the end of the period covered by this annual report.

Management's Report on Internal Control Over Financial Reporting

The Firm's management is responsible for establishing and maintaining adequate internal control over financial reporting. The Firm's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America ("U.S. GAAP").

The internal control over financial reporting includes those policies and procedures that:

- Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Firm;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. GAAP and that receipts and expenditures are being made only in accordance with authorizations of the Firm's management and directors; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of Firm assets that could have a material effect on the Firm's financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of the Firm's internal control over financial reporting as of December 31, 2022. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in Internal Control—Integrated Framework (2013). Based on management's assessment and those criteria, management believes that the Firm maintained effective internal control over financial reporting as of December 31, 2022.

The Firm's independent registered public accounting firm has audited and issued a report on the Firm's internal control over financial reporting, which appears below.

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Morgan Stanley:

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Morgan Stanley and subsidiaries (the "Firm") as of December 31, 2022, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Firm maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control — Integrated Framework (2013) issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the financial statements of the Firm as of and for the year ended December 31, 2022 and our report dated February 24, 2023 expressed an unqualified opinion on those financial statements.

Basis for Opinion

The Firm's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Firm's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Firm in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Deloitte & Touche LLP
New York, New York
February 24, 2023

Changes in Internal Control Over Financial Reporting

No change in the Firm's internal control over financial reporting (as such term is defined in Exchange Act Rule 13a-15(f)) occurred during the quarter ended December 31, 2022 that materially affected, or is reasonably likely to materially affect, the Firm's internal control over financial reporting.

Other Information

None.

Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

Unresolved Staff Comments

The Firm, like other well-known seasoned issuers, from time to time receives written comments from the staff of the SEC regarding its periodic or current reports under the Exchange Act. There are no comments that remain unresolved that the Firm received not less than 180 days before the end of the year to which this report relates that the Firm believes are material.

Properties

We have offices, operations and data centers located around the world. Our global headquarters and principal executive offices are located at 1585 Broadway, New York, New York. Our other principal offices include locations in Manhattan and the greater New York metropolitan area, London, Hong Kong and Tokyo. Our current facilities are adequate for our present and future operations for each of our business segments, although we may add regional offices, depending upon our future operations.

Legal Proceedings

In addition to the matters described below, in the normal course of business, the Firm has been named, from time to time, as a defendant in various legal actions, including arbitrations, class actions and other litigation, arising in connection with its activities as a global diversified financial services institution. Certain of the actual or threatened legal actions include claims for substantial compensatory and/or punitive damages or claims for indeterminate amounts of damages. In some cases, the entities that would otherwise be the primary defendants in such cases are bankrupt or are in financial distress. These actions include, but are not limited to, antitrust claims, claims under various false claims act statutes, and matters arising from our sales and trading businesses, and our activities in the capital markets.

The Firm is also involved, from time to time, in other reviews, investigations and proceedings (both formal and informal) by governmental and self-regulatory agencies regarding the Firm's business, and involving, among other matters, sales, trading, financing, prime brokerage, market-making activities, investment banking advisory services, capital market activities, financial products or offerings sponsored, underwritten or sold by the Firm, wealth and investment management services, and accounting and operational matters, certain of which may result in adverse judgments, settlements, fines, penalties, injunctions, limitations on our ability to conduct certain business, or other relief.

The Firm contests liability and/or the amount of damages as appropriate in each pending matter. Where available information indicates that it is probable a liability had been incurred at the date of the financial statements and the Firm can reasonably estimate the amount of that loss, the Firm accrues the estimated loss by a charge to income. The Firm's legal expenses can, and may in future, fluctuate from period to period, given the current environment regarding government investigations and private litigation affecting global financial services firms, including the Firm.

In many proceedings and investigations, however, it is inherently difficult to determine whether any loss is probable or even possible or to estimate the amount of any loss. The Firm cannot predict with certainty if, how or when such proceedings or investigations will be resolved or what the eventual settlement, fine, penalty or other relief, if any, may be, particularly for proceedings and investigations where the factual record is being developed or contested or where plaintiffs or government entities seek substantial or indeterminate damages, restitution, disgorgement or penalties. Numerous issues may need to be resolved before a loss or additional loss or range of loss or additional range of loss can be reasonably estimated for a proceeding or investigation, including through potentially lengthy discovery and determination of important factual matters, determination of issues related to class certification and the calculation of damages or other relief, and consideration of novel or unsettled legal questions relevant to the proceedings or investigations in question. Subject to the foregoing, the Firm believes, based on current knowledge and after consultation with counsel, that the outcome of such proceedings and investigations will not have a material adverse effect on the financial condition of the Firm, although the outcome of such proceedings or investigations could be material to the Firm's operating results and cash flows for a particular period depending on, among other things, the level of the Firm's revenues or income for such period.

While the Firm has identified below certain proceedings or investigations that the Firm believes to be material, individually or collectively, there can be no assurance that additional material losses will not be incurred from claims that have not yet been asserted or are not yet determined to be material. See also "Contingencies—Legal" in Note 15 to the Financial Statements.

Block Trading Matter

The Firm has been responding to subpoenas and other requests for information from the Enforcement Division of the U.S. Securities and Exchange Commission and the United States Attorney's Office for the Southern District of New York in connection with their investigations into various aspects of the Firm's blocks business, certain related sales and trading practices, and applicable controls (the "Investigations"). The Investigations are focused on whether the Firm and/or its employees shared and/or used information regarding impending block transactions in violation of federal securities laws and regulations. The Firm is continuing to cooperate with the Investigations and is responding to the requests. The Firm also faces potential civil liability arising from claims that have been or may be asserted by, among others, block transaction participants who contend they were harmed or disadvantaged including, among other things, as a result of a share price decline allegedly caused by the activities of the Firm and/or its employees, or as a result of the Firm's and/or its employees' failure to adhere to applicable laws and regulations. In addition, the Firm has responded to demands from shareholders under Section 220 of the Delaware General Corporation Law for books and records concerning the Investigations.

Residential Mortgage and Credit Crisis Matters

On May 17, 2013, the plaintiff in *IKB International S.A. in Liquidation, et al. v. Morgan Stanley, et al.* filed a complaint against the Firm and certain affiliates in the Supreme Court of the State of New York County ("Supreme Court of NY"). The complaint alleges that defendants made material misrepresentations and omissions in the sale to plaintiff of certain mortgage pass-through certificates backed by securitization trusts containing residential mortgage loans. The total amount of certificates allegedly sponsored, underwritten and/or sold by the Firm to plaintiff was approximately $133 million. The complaint alleges causes of action against the Firm for common law fraud, fraudulent concealment, aiding and abetting fraud, and negligent misrepresentation, and seeks, among other things, compensatory and punitive damages. On October 29, 2014, the court granted in part and denied in part the Firm's motion to dismiss. All claims regarding four certificates were dismissed. After these dismissals, the remaining amount of certificates allegedly issued by the Firm or sold to plaintiff by the Firm was approximately $116 million. On August 11, 2016, the Appellate Division, First Department ("First Department") affirmed the trial court's order denying in part the Firm's motion to dismiss the complaint. On July 15, 2022, the Firm filed a motion for summary judgment on all remaining claims.

On July 2, 2013, Deutsche Bank, in its capacity as trustee, became the named plaintiff in *Federal Housing Finance Agency, as Conservator for the Federal Home Loan Mortgage Corporation, on behalf of the Trustee of the Morgan Stanley ABS Capital I Inc. Trust, Series 2007-NC1 (MSAC 2007-NC1) v. Morgan Stanley ABS Capital I Inc.*, and filed a complaint in the Supreme Court of NY styled *Deutsche Bank National Trust Company, as Trustee for the Morgan Stanley ABS Capital I Inc. Trust, Series 2007-NC1 v. Morgan Stanley ABS Capital I, Inc.* On February 3, 2014, the plaintiff filed an amended complaint, which asserts claims for breach of contract and breach of the implied covenant of good faith and fair dealing, and alleges, among other things, that the loans in the trust, which had an original principal balance of approximately $1.25 billion, breached various representations and warranties. The amended complaint seeks, among other relief, specific performance of the loan breach remedy procedures in the transaction documents, unspecified damages, rescission, interest and costs. On April 12, 2016, the court granted in part and denied in part the Firm's motion to dismiss the amended complaint, dismissing all claims except a single claim alleging failure to notify, regarding which the motion was denied without prejudice. On December 9, 2016, the Firm renewed its motion to dismiss that notification claim. On January 17, 2017, the First Department affirmed the lower court's April 12, 2016 order. On April 13, 2017, the First Department denied plaintiff's motion for leave to appeal to the New York Court of Appeals ("Court of Appeals"). On March 8, 2018, the trial court denied the Firm's renewed motion to dismiss the notification claims. On April 27, 2022, the Firm filed a motion for summary judgment concerning plaintiff's remaining claim. On October 4, 2022, the parties reached an agreement in principle to settle the litigation.

On November 6, 2013, Deutsche Bank, in its capacity as trustee, became the named plaintiff in *Federal Housing Finance Agency, as Conservator for the Federal Home Loan Mortgage Corporation, on behalf of the Trustee of the Morgan Stanley ABS Capital I Inc. Trust, Series 2007-NC3 (MSAC 2007-NC3) v. Morgan Stanley Mortgage Capital Holdings LLC*, and filed a complaint in the Supreme Court of NY styled *Deutsche Bank National Trust Company, solely in its capacity as Trustee for Morgan Stanley ABS Capital I Inc. Trust, Series 2007-NC3 v. Morgan Stanley Mortgage Capital Holdings LLC, as Successor-by-Merger to Morgan Stanley Mortgage Capital Inc.* The complaint asserts claims for breach of contract and breach of the implied covenant of good faith and fair dealing, and alleges, among other things, that the loans in the trust, which had an original principal balance of approximately $1.3 billion, breached various representations and warranties. The complaint seeks, among other relief, specific performance of the loan breach remedy procedures in the transaction documents, unspecified damages, rescission, interest and costs. On April 12, 2016, the court granted the Firm's motion to dismiss the complaint and granted the plaintiff the ability to seek to replead certain aspects of the complaint. On January 17, 2017, the First Department affirmed the lower court's order granting the motion to dismiss the complaint. On January 9, 2017, plaintiff filed a motion to amend its complaint. On April 13, 2017, the First Department denied plaintiff's motion for leave to appeal to the Court of Appeals. On March 8, 2018, the trial court granted plaintiff's motion to amend its complaint to include

failure to notify claims. On March 19, 2018, the Firm filed an answer to plaintiff's amended complaint. On April 27, 2022, the Firm filed a motion for summary judgment concerning plaintiff's remaining claim. On October 4, 2022, the parties reached an agreement in principle to settle the litigation.

Antitrust Related Matters

The Firm and other financial institutions are responding to a number of governmental investigations and civil litigation matters related to allegations of anticompetitive conduct in various aspects of the financial services industry, including the matters described below.

Beginning in February of 2016, the Firm was named as a defendant in multiple purported antitrust class actions now consolidated into a single proceeding in the United States District Court for the Southern District of New York ("SDNY") styled *In Re: Interest Rate Swaps Antitrust Litigation*. Plaintiffs allege, inter alia, that the Firm, together with a number of other financial institution defendants, violated U.S. and New York state antitrust laws from 2008 through December of 2016 in connection with their alleged efforts to prevent the development of electronic exchange-based platforms for interest rate swaps trading. Complaints were filed both on behalf of a purported class of investors who purchased interest rate swaps from defendants, as well as on behalf of two swap execution facilities that allegedly were thwarted by the defendants in their efforts to develop such platforms. The consolidated complaints seek, among other relief, certification of the investor class of plaintiffs and treble damages. On July 28, 2017, the court granted in part and denied in part the defendants' motion to dismiss the complaints. A decision on plaintiffs' motion for class certification is pending.

In August of 2017, the Firm was named as a defendant in a purported antitrust class action in the United States District Court for the SDNY styled *Iowa Public Employees' Retirement System et al. v. Bank of America Corporation et al*. Plaintiffs allege, inter alia, that the Firm, together with a number of other financial institution defendants, violated U.S. antitrust laws and New York state law in connection with their alleged efforts to prevent the development of electronic exchange-based platforms for securities lending. The class action complaint was filed on behalf of a purported class of borrowers and lenders who entered into stock loan transactions with the defendants. The class action complaint seeks, among other relief, certification of the class of plaintiffs and treble damages. On September 27, 2018, the court denied the defendants' motion to dismiss the class action complaint. Plaintiffs' motion for class certification was referred by the District Court to a magistrate judge who, on June 30, 2022, issued a report and recommendation that the District Court certify a class. The motion for class certification and the parties' objections to the report and recommendation are pending before the District Court.

***Qui Tam* Matters**

The Firm and other financial institutions are defending against *qui tam* litigations brought under various state false claims statutes, including the matter described below. Such matters may involve the same types of claims pursued in multiple jurisdictions and may include claims for treble damages.

On August 18, 2009, Relators Roger Hayes and C. Talbot Heppenstall, Jr., filed a *qui tam* action in New Jersey state court styled *State of New Jersey ex. rel. Hayes v. Bank of America Corp., et al.* The complaint, filed under seal pursuant to the New Jersey False Claims Act, alleged that the Firm and several other underwriters of municipal bonds had defrauded New Jersey issuers by misrepresenting that they would achieve the best price or lowest cost of capital in connection with certain municipal bond issuances. On March 17, 2016, the court entered an order unsealing the complaint. On November 17, 2017, Relators filed an amended complaint to allege the Firm mispriced certain bonds issued in twenty-three bond offerings between 2008 and 2017, having a total par amount of $6.946 billion. The complaint seeks, among other relief, treble damages. On February 22, 2018, the Firm moved to dismiss the amended complaint, and on July 17, 2018, the court denied the Firm's motion. On October 13, 2021, following a series of voluntary and involuntary dismissals, Relators limited their claims to certain bonds issued in five offerings the Firm underwrote between 2008 and 2011, having a total par amount of $3.856 billion.

European Matters

In matters styled *Case number 15/3637* and *Case number 15/4353*, the Dutch Tax Authority ("Dutch Authority") is challenging in the Dutch courts the prior set-off by the Firm of approximately €124 million (approximately $133 million) plus accrued interest of withholding tax credits against the Firm's corporation tax liabilities for the tax years 2007 to 2012. The Dutch Authority alleges that the Firm was not entitled to receive the withholding tax credits on the basis, inter alia, that a Firm subsidiary did not hold legal title to certain securities subject to withholding tax on the relevant dates. The Dutch Authority has also alleged that the Firm failed to provide certain information to the Dutch Authority and to keep adequate books and records. On April 26, 2018, the District Court in Amsterdam issued a decision dismissing the Dutch Authority's claims with respect to certain of the tax years in dispute. On May 12, 2020, the Court of Appeal in Amsterdam granted the Dutch Authority's appeal in matters re-styled *Case number 18/00318* and *Case number 18/00319*. On June 22, 2020, the Firm filed an appeal against the decision of the Court of Appeal in Amsterdam before the Dutch High Court. On January 29, 2021, the Advocate General of the Dutch High Court issued an advisory opinion on the Firm's appeal, which rejected the Firm's principal grounds of appeal. On February 11, 2021, the Firm and the Dutch Authority each responded to this opinion. On June 22, 2021, Dutch criminal authorities sought various documents in connection with an investigation of the Firm related to the

civil claims asserted by the Dutch Authority concerning the accuracy of the Firm subsidiary's tax returns and the maintenance of its books and records for 2007 to 2012.

On October 5, 2017, various institutional investors filed a claim against the Firm and another bank in a matter now styled *Case number B-803-18 (previously BS 99-6998/2017)*, in the City Court of Copenhagen, Denmark concerning their roles as underwriters of the initial public offering ("IPO") in March 2014 of the Danish company OW Bunker A/S. The claim seeks damages of approximately DKK 529 million (approximately $76 million) plus interest in respect of alleged losses arising from investing in shares in OW Bunker, which entered into bankruptcy in November 2014. Separately, on November 29, 2017, another group of institutional investors joined the Firm and another bank as defendants to pending proceedings in the High Court of Eastern Denmark against various other parties involved in the IPO in a matter styled *Case number B-2073-16*. The claim brought against the Firm and the other bank has been given its own *Case number B-2564-17*. The investors claim damages of approximately DKK 767 million (approximately $110 million) plus interest from the Firm and the other bank on a joint and several basis with the Defendants to these proceedings. Both claims are based on alleged prospectus liability; the second claim also alleges professional liability of banks acting as financial intermediaries. On June 8, 2018, the City Court of Copenhagen, Denmark ordered that the matters now styled *Case number B-803-18, Case number B-2073-16,* and *Case number B-2564-17* be heard together before the High Court of Eastern Denmark. On June 29, 2018, the Firm filed its defense to the matter now styled *Case number B-2564-17*. On February 4, 2019, the Firm filed its defense to the matter now styled *Case number B-803-18.*

The Firm is engaging with the UK Competition and Markets Authority in connection with its investigation of suspected anti-competitive arrangements in the financial services sector, specifically regarding the Firm's activities concerning certain liquid fixed income products between 2009 and 2012.

Other

On August 13, 2021, the plaintiff in *Camelot Event Driven Fund, a Series of Frank Funds Trust v. Morgan Stanley & Co. LLC, et al.* filed in the Supreme Court of NY a purported class action complaint alleging violations of the federal securities laws against ViacomCBS ("Viacom"), certain of its officers and directors, and the underwriters, including the Firm, of two March 2021 Viacom offerings: a $1.7 billion Viacom Class B Common Stock offering and a $1 billion offering of 5.75% Series A Mandatory Convertible Preferred Stock (collectively, the "Offerings"). The complaint alleges, inter alia, that the Viacom offering documents for both issuances contained material omissions because they did not disclose that certain of the underwriters, including the Firm, had prime brokerage relationships and served as counterparties to certain derivative transactions with Archegos Capital Management LP, ("Archegos"), a fund with significant exposure to Viacom securities across multiple prime brokers. The complaint, which seeks, among other things, unspecified compensatory damages, alleges that the offering documents did not adequately disclose the risks associated with Archegos's concentrated Viacom positions at the various prime brokers, including that the unwind of those positions could have a deleterious impact on the stock price of Viacom. On November 5, 2021, the complaint was amended to add allegations that defendants failed to disclose that certain underwriters, including the Firm, had intended to unwind Archegos's Viacom positions while simultaneously distributing the Offerings. On February 6, 2023, the court issued a decision denying the motions to dismiss as to the Firm and the other underwriters, but granted the motion to dismiss as to Viacom and the Viacom individual defendants. On February 15, 2023, the underwriters, including the Firm, filed their Notices of Appeal of the denial of their motions to dismiss.

Mine Safety Disclosures

Not applicable.

Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Morgan Stanley's common stock trades under the symbol "MS" on the New York Stock Exchange. As of January 31, 2023, the Firm had 48,738 holders of record; however, the Firm believes the number of beneficial owners of the Firm's common stock exceeds this number.

The table below sets forth the information with respect to purchases made by or on behalf of the Firm of its common stock during the fourth quarter of the year ended December 31, 2022.

Issuer Purchases of Equity Securities

$ in millions, except per share data	Total Number of Shares Purchased[1]	Average Price Paid per Share	Total Shares Purchased as Part of Share Repurchase Program[2, 3]	Dollar Value of Remaining Authorized Repurchase
October	4,479,588	$ 78.91	4,436,800	$ 17,095
November	8,293,421	$ 87.27	8,010,290	$ 16,395
December	7,492,666	$ 89.07	7,304,385	$ 15,745
Three Months Ended December 31, 2022	20,265,675	$ 86.08	19,751,475	

1. Includes 514,200 shares acquired by the Firm in satisfaction of the tax withholding obligations on stock-based awards granted under the Firm's stock-based compensation plans during the three months ended December 31, 2022.
2. Share purchases under publicly announced authorizations are made pursuant to open-market purchases, Rule 10b5-1 plans or privately negotiated transactions (including with employee benefit plans) as market conditions warrant and at prices the Firm deems appropriate and may be suspended at any time.
3. The Firm's Board of Directors has approved the repurchase of the Firm's outstanding common stock under a share repurchase authorization (the "Share Repurchase Authorization") from time to time as conditions warrant and subject to limitations on distributions from the Federal Reserve. The Share Repurchase Authorization is for capital management purposes and considers, among other things, business segment capital needs, as well as equity-based compensation and benefit plan requirements. The Share Repurchase Authorization has no set expiration or termination date.

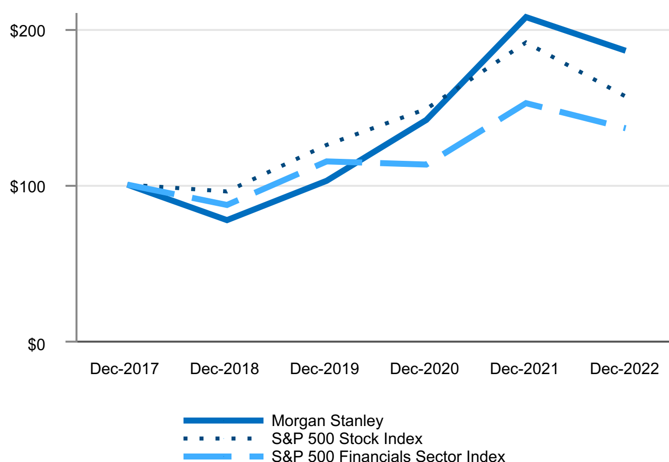
On June 27, 2022, the Firm announced that its Board of Directors approved a new multi-year repurchase authorization of up to $20 billion of outstanding common stock, without a set expiration date, beginning in the third quarter of 2022, which will be exercised from time to time as conditions warrant. For further information, see "Liquidity and Capital Resources—Regulatory Requirements—Capital Plans, Stress Tests and the Stress Capital Buffer."

Stock Performance Graph

The following graph compares the cumulative total shareholder return (rounded to the nearest whole dollar) of the Firm's common stock, the S&P 500 Stock Index and the S&P 500 Financials Sector Index for the last five years. The graph assumes a $100 investment at the closing price on December 31, 2017 and reinvestment of dividends on the respective dividend payment dates without commissions. This graph does not forecast future performance of the Firm's common stock.

Cumulative Total Return

December 31, 2017 – December 31, 2022



	At December 31,					
	2017	2018	2019	2020	2021	**2022**
Morgan Stanley	$100.00	$ 77.23	$102.45	$141.44	$207.37	**$185.80**
S&P 500 Stock Index	100.00	95.61	125.45	148.52	191.11	**156.47**
S&P 500 Financials Sector Index	100.00	86.96	114.87	112.85	152.20	**136.11**

Directors, Executive Officers and Corporate Governance

Information relating to the Firm's directors and nominees in the Firm's definitive proxy statement for its 2023 annual meeting of shareholders ("Morgan Stanley's proxy statement") is incorporated by reference herein.

Information relating to the Firm's executive officers is contained in the "Business" section of this report under "Information about Our Executive Officers."

Morgan Stanley's Code of Ethics and Business Conduct applies to all directors, officers and employees, including its Chief Executive Officer, Chief Financial Officer and Deputy Chief Financial Officer. You can find the Code of Ethics and Business Conduct on the webpage, www.morganstanley.com/content/dam/msdotcom/en/about-us-governance/pdf/MS_Code_of_Ethics_and_Business_Conduct_2022.pdf. The Firm will post any amendments to the Code of Ethics and Business Conduct, and any waivers that are required to be disclosed by the rules of either the U.S. Securities and Exchange Commission or the New York Stock Exchange LLC, on the webpage.

Executive Compensation

Information relating to director and executive officer compensation in Morgan Stanley's proxy statement is incorporated by reference herein.

Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Equity Compensation Plan Information

The following table provides information about outstanding awards and shares of common stock available for future awards under all of Morgan Stanley's equity compensation plans. Morgan Stanley has not made any grants of common stock outside of its equity compensation plans.

	At December 31, 2022		
	(a)	(b)	(c)
plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights[1]	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders	68,944,215	$ —	134,287,611 [2]
Equity compensation plans not approved by security holders	—	—	—
Total	68,944,215	$ —	134,287,611

1. Includes outstanding restricted stock unit and performance stock unit awards. The number of outstanding performance stock unit awards is based on the target number of units granted to senior executives.
2. Includes the following:
(a) 38,215,460 shares available under the ESPP. Pursuant to this plan, which is qualified under Section 423 of the Internal Revenue Code, eligible employees are permitted to purchase shares of common stock at a discount to market price through regular payroll deduction. Effective February 1, 2022, the Compensation, Management Development and Succession Committee of the Board ("CMDS Committee") approved the recommencement of contributions under the ESPP.
(b) 80,040,574 shares available under the Equity Incentive Compensation Plan. Awards may consist of stock options, stock appreciation rights, restricted stock, restricted stock units to be settled by the delivery of shares of common stock (or the value thereof), performance-based units, other awards that are valued by reference to or otherwise based on the fair market value of common stock, and other equity-based or equity-related awards approved by the CMDS Committee.
(c) 14,869,924 shares available under the Employee Equity Accumulation Plan, which includes 733,757 shares available for awards of restricted stock and restricted stock units. Awards may consist of stock options, stock appreciation rights, restricted stock, restricted stock units to be settled by the delivery of shares of common stock (or the value thereof), other awards that are valued by reference to or otherwise based on the fair market value of common stock, and other equity-based or equity-related awards approved by the CMDS Committee.
(d) 355,243 shares available under the Tax Deferred Equity Participation Plan. Awards consist of restricted stock units, which are settled by the delivery of shares of common stock.
(e) 806,410 shares available under the Directors' Equity Capital Accumulation Plan. This plan provides for periodic awards of shares of common stock and stock units to non-employee directors and also allows non-employee directors to defer the cash fees they earn for services as a director in the form of stock units.

Other information relating to security ownership of certain beneficial owners and management is set forth under the caption "Ownership of Our Common Stock" in Morgan Stanley's proxy statement, and such information is incorporated by reference herein.

Certain Relationships and Related Transactions and Director Independence

Information regarding certain relationships and related transactions in Morgan Stanley's proxy statement is incorporated by reference herein.

Information regarding director independence in Morgan Stanley's proxy statement is incorporated by reference herein.

Principal Accountant Fees and Services

Information regarding principal accountant fees and services in Morgan Stanley's proxy statement is incorporated by reference herein.

Exhibits and Financial Statement Schedules

Documents filed as part of this report

- The financial statements required to be filed in this annual report on Form 10-K are included in the section titled "Financial Statements and Supplementary Data."

Exhibit Index[1]

Certain of the following exhibits, as indicated parenthetically, were previously filed as exhibits to registration statements filed by Morgan Stanley or its predecessor companies under the Securities Act or to reports or registration statements filed by Morgan Stanley or its predecessor companies under the Exchange Act and are hereby incorporated by reference to such statements or reports. Morgan Stanley's Exchange Act file number is 1-11758. The Exchange Act file number of Morgan Stanley Group Inc., a predecessor company ("MSG"), was 1-9085.

Exhibit No.	Description
3.1	Amended and Restated Certificate of Incorporation of Morgan Stanley, as amended to date (Exhibit 3.1 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended June 30, 2022).
3.2	Amended and Restated Bylaws of Morgan Stanley, as amended to date (Exhibit 3.1 to Morgan Stanley's current report on Form 8-K dated January 23, 2023).
4.1*	Description of Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934.
4.2	Amended and Restated Senior Indenture dated as of May 1, 1999 between Morgan Stanley and The Bank of New York, as trustee (Exhibit 4e to Morgan Stanley's Registration Statement on Form S-3/A (No. 333-75289) as amended by Fourth Supplemental Senior Indenture dated as of October 8, 2007 (Exhibit 4.3 to Morgan Stanley's annual report on Form 10-K for the fiscal year ended November 30, 2007).

Exhibit No.	Description
4.3	Senior Indenture dated as of November 1, 2004 between Morgan Stanley and The Bank of New York, as trustee (Exhibit 4-f to Morgan Stanley's Registration Statement on Form S-3/A (No. 333-117752), as amended by First Supplemental Senior Indenture dated as of September 4, 2007 (Exhibit 4.5 to Morgan Stanley's annual report on Form 10-K for the fiscal year ended November 30, 2007), Second Supplemental Senior Indenture dated as of January 4, 2008 (Exhibit 4.1 to Morgan Stanley's current report on Form 8-K dated January 4, 2008), Third Supplemental Senior Indenture dated as of September 10, 2008 (Exhibit 4 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended August 31, 2008), Fourth Supplemental Senior Indenture dated as of December 1, 2008 (Exhibit 4.1 to Morgan Stanley's current report on Form 8-K dated December 1, 2008), Fifth Supplemental Senior Indenture dated as of April 1, 2009 (Exhibit 4 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended March 31, 2009), Sixth Supplemental Senior Indenture dated as of September 16, 2011 (Exhibit 4.1 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended September 30, 2011), Seventh Supplemental Senior Indenture dated as of November 21, 2011 (Exhibit 4.4 to Morgan Stanley's annual report on Form 10-K for the year ended December 31, 2011), Eighth Supplemental Senior Indenture dated as of May 4, 2012 (Exhibit 4.1 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended June 30, 2012), Ninth Supplemental Senior Indenture dated as of March 10, 2014 (Exhibit 4.1 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended March 31, 2014), Tenth Supplemental Senior Indenture dated as of January 11, 2017 (Exhibit 4.1 to Morgan Stanley's current report on Form 8-K dated January 11, 2017) and Eleventh Supplemental Senior Indenture dated as of March 24, 2021 (Exhibit 4.4 to Morgan Stanley's annual report on Form 10-K for the year ended December 31, 2021).
4.4	The Unit Agreement Without Holders' Obligations, dated as of August 29, 2008, between Morgan Stanley and The Bank of New York Mellon, as Unit Agent, as Trustee and Paying Agent under the Senior Indenture referred to therein and as Warrant Agent under the Warrant Agreement referred to therein (Exhibit 4.1 to Morgan Stanley's current report on Form 8-K dated August 29, 2008).
4.5	Subordinated Indenture dated as of October 1, 2004 between Morgan Stanley and The Bank of New York, as trustee (Exhibit 4-g to Morgan Stanley's Registration Statement on Form S-3/A (No. 333-117752)).
4.6	Junior Subordinated Indenture dated as of October 12, 2006 between Morgan Stanley and The Bank of New York, as trustee (Exhibit 4.1 to Morgan Stanley's current report on Form 8-K dated October 12, 2006).
4.7	Deposit Agreement dated as of July 6, 2006 among Morgan Stanley, JPMorgan Chase Bank, N.A. and the holders from time to time of the depositary receipts described therein (Exhibit 4.3 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended May 31, 2006).
4.8	Form of Deposit Agreement among Morgan Stanley, JPMorgan Chase Bank, N.A. and the holders from time to time of the depositary receipts representing interests in the Series A Preferred Stock described therein (Exhibit 2.4 to Morgan Stanley's Registration Statement on Form 8-A dated July 5, 2006).
4.9	Depositary Receipt for Depositary Shares, representing Floating Rate Non-Cumulative Preferred Stock, Series A (included in Exhibit 4.8 hereto).
4.10	Form of Deposit Agreement among Morgan Stanley, The Bank of New York Mellon and the holders from time to time of the depositary receipts representing interests in the Series E Preferred Stock described therein (Exhibit 2.6 to Morgan Stanley's Registration Statement on Form 8-A dated September 27, 2013).
4.11	Depositary Receipt for Depositary Shares, representing Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series E (included in Exhibit 4.10 hereto).
4.12	Form of Deposit Agreement among Morgan Stanley, The Bank of New York Mellon and the holders from time to time of the depositary receipts representing interests in the Series F Preferred stock described therein (Exhibit 2.4 to Morgan Stanley's Registration Statement on Form 8-A dated December 9, 2013).
4.13	Depositary Receipt for Depositary Shares, representing Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series F (included in Exhibit 4.12 hereto).
4.14	Form of Deposit Agreement among Morgan Stanley, The Bank of New York Mellon and the holders from time to time of the depositary receipts representing interests in the Series I Preferred stock described therein (Exhibit 2.4 to Morgan Stanley's Registration Statement on Form 8-A dated September 17, 2014).
4.15	Depositary Receipt for Depositary Shares, representing Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series I (included in Exhibit 4.14 hereto).
4.16	Form of Deposit Agreement among Morgan Stanley, The Bank of New York Mellon and the holders from time to time of the depositary receipts representing interests in the Series K Preferred Stock described therein (Exhibit 2.4 to Morgan Stanley's Registration Statement on Form 8-A dated January 30, 2017).
4.17	Depositary Receipt for Depositary Shares, representing Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series K (included in Exhibit 4.16 hereto).
4.18	Form of Deposit Agreement among Morgan Stanley, The Bank of New York Mellon and the holders from time to time of the depositary receipts representing interests in the Series L Preferred Stock described therein (Exhibit 2.4 to Morgan Stanley's Registration Statement on Form 8-A dated November 22, 2019).

Exhibit No.	Description
4.19	Depositary Receipt for Depositary Shares, representing 4.875% Non-Cumulative Preferred Stock, Series L (included in Exhibit 4.18 hereto).
4.20	Form of Deposit Agreement among Morgan Stanley, The Bank of New York Mellon and the holders from time to time of the depositary receipts representing interests in the Series N Preferred Stock described therein (Exhibit 4.5 to Morgan Stanley's current report on Form 8-K dated October 2, 2020).
4.21	Depositary Receipt for Depositary Shares, representing Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series N (included in Exhibit 4.20 hereto).
4.22	Form of Deposit Agreement among Morgan Stanley, The Bank of New York Mellon and the holders from time to time of the depositary receipts representing interests in the Series O Preferred Stock described therein (Exhibit 2.4 to Morgan Stanley's Registration Statement on Form 8-A dated October 22, 2021).
4.23	Depositary Receipt for Depositary Shares, representing 4.250% Non-Cumulative Preferred Stock, Series O (included in Exhibit 4.22 hereto).
4.24	Form of Deposit Agreement among Morgan Stanley, The Bank of New York Mellon and the holders from time to time of the depositary receipts representing interests in the Series P Preferred Stock described therein (Exhibit 2.4 to Morgan Stanley's Registration Statement on Form 8-A dated August 1, 2022).
4.25	Depositary Receipt for Depositary Shares, representing 6.500% Non-Cumulative Preferred Stock, Series P (included in Exhibit 4.24 hereto).
10.1	Amended and Restated Trust Agreement dated as of January 1, 2018 by and between Morgan Stanley and State Street Bank and Trust Company (Exhibit 10.1 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended March 31, 2018).
10.2	Amended and Restated Investor Agreement dated as of June 30, 2011 by and between Morgan Stanley and Mitsubishi UFJ Financial Group, Inc. (Exhibit 10.1 to Morgan Stanley's current report on Form 8-K dated June 30, 2011), as amended by Third Amendment, dated October 3, 2013 (Exhibit 10.1 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended September 30, 2013), Fourth Amendment, dated April 6, 2016 (Exhibit 10.1 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended March 31, 2016), Fifth Amendment, dated October 4, 2018 (Exhibit 10.3 to Morgan Stanley's annual report on Form 10-K for the year ended December 31, 2020), and Sixth Amendment, dated April 13, 2021 (Exhibit 10.1 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended June 30, 2021).
10.3†	Morgan Stanley 401(k) Plan, amended and restated as of January 1, 2018 (Exhibit 10.4 to Morgan Stanley's annual report on Form 10-K for the year ended December 31, 2018), as amended by Amendment (Exhibit 10.4 to Morgan Stanley's annual report on Form 10-K for the year ended December 31, 2019) and Amendment (Exhibit 10.6 to Morgan Stanley's annual report on Form 10-K for the year ended December 31, 2020) and Amendment (Exhibit 10.4 to Morgan Stanley's annual report on Form 10-K for the year ended December 31, 2021).
10.4†*	Amendment to Morgan Stanley 401(k) Plan, dated December 13, 2022.
10.5†	Tax Deferred Equity Participation Plan as amended and restated as of November 26, 2007 (Exhibit 10.9 to Morgan Stanley's annual report on Form 10-K for the fiscal year ended November 30, 2007).
10.6†*	Directors' Equity Capital Accumulation Plan as amended and restated as of November 1, 2022.
10.7†	Employees' Equity Accumulation Plan as amended and restated as of November 26, 2007 (Exhibit 10.12 to Morgan Stanley's annual report on Form 10-K for the fiscal year ended November 30, 2007).
10.8†*	Employee Stock Purchase Plan as amended and restated as of August 1, 2022.
10.9†	Morgan Stanley Supplemental Executive Retirement and Excess Plan, amended and restated effective December 31, 2008 (Exhibit 10.2 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended March 31, 2009) as amended by Amendment (Exhibit 10.5 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended June 30, 2009), Amendment (Exhibit 10.19 to Morgan Stanley's annual report on Form 10-K for the year ended December 31, 2010), Amendment (Exhibit 10.3 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended June 30, 2011) and Amendment (Exhibit 10.1 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended September 30, 2014).
10.10†	Form of Deferred Compensation Agreement under the Pre-Tax Incentive Program 2 (Exhibit 10.12 to MSG's annual report for the fiscal year ended November 30, 1996).
10.11†	Morgan Stanley UK Share Ownership Plan (Exhibit 4.1 to Morgan Stanley's Registration Statement on Form S-8 (No. 333-146954)).
10.12†	Supplementary Deed of Participation for the Morgan Stanley UK Share Ownership Plan, dated as of November 5, 2009 (Exhibit 10.36 to Morgan Stanley's annual report on Form 10-K for the year ended December 31, 2009).
10.13†	Aircraft Time Sharing Agreement, dated as of January 1, 2010, by and between Corporate Services Support Corp. and James P. Gorman (Exhibit 10.1 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended March 31, 2010).

Exhibit No.	Description
10.14†	Agreement between Morgan Stanley and James P. Gorman, dated August 16, 2005, and amendment dated December 17, 2008 (Exhibit 10.2 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended March 31, 2010), as amended by Amendment (Exhibit 10.25 to Morgan Stanley's annual report on Form 10-K for the year ended December 31, 2013).
10.15†	Form of Restrictive Covenant Agreement (Exhibit 10 to Morgan Stanley's current report on Form 8-K dated November 22, 2005).
10.16†	Equity Incentive Compensation Plan, as amended and restated as of December 14, 2020 (Exhibit 10.19 to Morgan Stanley's annual report on Form 10-K for the year ended December 31, 2020).
10.17†	Morgan Stanley Compensation Incentive Plan, as amended and restated as of December 14, 2020 (Exhibit 10.24 to Morgan Stanley's annual report on Form 10-K for the year ended December 31, 2020).
10.18†*	Morgan Stanley Schedule of Non-Employee Directors Annual Compensation, effective as of November 1, 2022.
10.19†	Description of Operating Committee Medical Coverage (Exhibit 10.2 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended March 31, 2015).
10.20†	Form of Award Certificate for Discretionary Retention Awards of Stock Units. (Exhibit 10.33 to Morgan Stanley's annual report on Form 10-K for the year ended December 31, 2017).
10.21†	Form of Award Certificate for Discretionary Retention Awards under the Morgan Stanley Compensation Incentive Plan. (Exhibit 10.34 to Morgan Stanley's annual report on Form 10-K for the year ended December 31, 2017).
10.22†*	Form of Award Certificate for Long-Term Incentive Program Awards.
10.23†	Form of Aircraft Time-Sharing Agreement (Exhibit 10.1 to Morgan Stanley's quarterly report on Form 10-Q for the quarter ended September 30, 2020).
21*	Subsidiaries of Morgan Stanley.
22*	Guarantor and Subsidiary Issuer of Registered Guaranteed Securities.
23.1*	Consent of Deloitte & Touche LLP.
24	Powers of Attorney (included on signature page).
31.1*	Rule 13a-14(a) Certification of Chief Executive Officer.
31.2*	Rule 13a-14(a) Certification of Chief Financial Officer.
32.1**	Section 1350 Certification of Chief Executive Officer.
32.2**	Section 1350 Certification of Chief Financial Officer.
101	Interactive Data Files pursuant to Rule 405 of Regulation S-T formatted in Inline eXtensible Business Reporting Language ("Inline XBRL").
104	Cover Page Interactive Data File (formatted in Inline XBRL and contained in Exhibit 101).

1. For purposes of this Exhibit Index, references to "The Bank of New York" mean in some instances the entity successor to JPMorgan Chase Bank, N.A. or J.P. Morgan Trust Company, National Association; references to "JPMorgan Chase Bank, N.A." mean the entity formerly known as The Chase Manhattan Bank, in some instances as the successor to Chemical Bank; references to "J.P. Morgan Trust Company, N.A." mean the entity formerly known as Bank One Trust Company, N.A., as successor to The First National Bank of Chicago.

* Filed herewith.

** Furnished herewith.

† Management contract or compensatory plan or arrangement required to be filed as an exhibit to this Form 10-K pursuant to Item 15(b).

Note: Other instruments defining the rights of holders of long-term debt securities of Morgan Stanley and its subsidiaries are omitted pursuant to Section (b)(4)(iii) of Item 601 of Regulation S-K. Morgan Stanley hereby agrees to furnish copies of these instruments to the U.S. Securities and Exchange Commission upon request.

Form 10-K Summary

None.

Signatures

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on February 24, 2023.

MORGAN STANLEY
(REGISTRANT)

By: /s/ JAMES P. GORMAN

(James P. Gorman)
Chairman of the Board and Chief Executive Officer

POWER OF ATTORNEY

We, the undersigned, hereby severally constitute Sharon Yeshaya, Eric F. Grossman and Martin M. Cohen, and each of them singly, our true and lawful attorneys with full power to them and each of them to sign for us, and in our names in the capacities indicated below, any and all amendments to the annual report on Form 10-K filed with the Securities and Exchange Commission, hereby ratifying and confirming our signatures as they may be signed by our said attorneys to any and all amendments to said annual report on Form 10-K.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities indicated on the 24th day of February, 2023.

Signature	Title
/s/ JAMES P. GORMAN **(James P. Gorman)**	Chairman of the Board and Chief Executive Officer (Principal Executive Officer)
/s/ SHARON YESHAYA **(Sharon Yeshaya)**	Executive Vice President and Chief Financial Officer (Principal Financial Officer)
/s/ RAJA J. AKRAM **(Raja J. Akram)**	Deputy Chief Financial Officer (Chief Accounting Officer and Controller)
/s/ ALISTAIR DARLING **(Alistair Darling)**	Director
/s/ THOMAS H. GLOCER **(Thomas H. Glocer)**	Director
/s/ ROBERT H. HERZ **(Robert H. Herz)**	Director

Signature	Title
/s/ ERIKA H. JAMES **(Erika H. James)**	Director
/s/ HIRONORI KAMEZAWA **(Hironori Kamezawa)**	Director
/s/ SHELLEY B. LEIBOWITZ **(Shelley B. Leibowitz)**	Director
/s/ STEPHEN J. LUCZO **(Stephen J. Luczo)**	Director
/s/ JAMI MISCIK **(Jami Miscik)**	Director
/s/ MASATO MIYACHI **(Masato Miyachi)**	Director
/s/ DENNIS M. NALLY **(Dennis M. Nally)**	Director
/s/ MARY L. SCHAPIRO **(Mary L. Schapiro)**	Director
/s/ PERRY M. TRAQUINA **(Perry M. Traquina)**	Director
/s/ RAYFORD WILKINS, JR. **(Rayford Wilkins, Jr.)**	Director

EXHIBIT 4.1

DESCRIPTION OF THE SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

As of February 24, 2023, Morgan Stanley has three classes of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"): (1) common stock; (2) eight series of depositary shares representing interests in preferred stock; and (3) two issuances of Global Medium-Term Notes, Series A of Morgan Stanley Finance LLC (and Morgan Stanley's guarantees with respect thereto).

Authorized Capital Stock

Morgan Stanley's authorized capital stock consists of 3,500,000,000 shares of common stock, par value $0.01 per share, and 30,000,000 shares of preferred stock, par value $0.01 per share.

DESCRIPTION OF COMMON STOCK

The following description of common stock is a summary and does not purport to be complete. You should refer to our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws. Copies of our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws are incorporated by reference as Exhibits to the Form 10-K. We encourage you to read these documents.

Voting Rights. Each holder of Morgan Stanley's common stock has one vote per share on all matters voted on generally by the stockholders, including the election of directors. Except as otherwise required by law or as provided with respect to any series of preferred stock, the holders of Morgan Stanley's common stock will possess all voting power. At each annual meeting of stockholders, the Board of Directors will be elected by a majority vote or, in the event of a contested election, a plurality vote of all votes cast at such meeting to hold office until the next annual meeting of stockholders, with each director to hold office until his or her successor shall have been duly elected and qualified. Because Morgan Stanley's certificate of incorporation does not provide for cumulative voting rights, the holders of a majority of the voting power of the then outstanding shares of capital stock entitled to be voted generally in the election of directors, which is referred to as the "voting stock," represented at a meeting will be able to elect all the directors standing for election at the meeting.

Dividends. The holders of Morgan Stanley's common stock are entitled to share equally in dividends as may be declared by the Board of Directors out of funds legally available therefor, but only after payment of dividends required to be paid on outstanding shares of offered preferred stock and any other class or series of stock having preference over the common stock as to dividends.

Liquidation Rights. Upon voluntary or involuntary liquidation, dissolution or winding up of Morgan Stanley, the holders of the common stock will share pro rata in the assets remaining after payments to creditors and holders of any offered preferred stock and any other class or series of stock having preference over the common stock upon liquidation, dissolution or winding up that may be then outstanding.

Because Morgan Stanley is a holding company, its rights and the rights of holders of its capital stock, including the holders of its common stock, to participate in the distribution of assets of any of Morgan Stanley's subsidiaries upon the subsidiary's liquidation or recapitalization will be subject to the prior claims of the subsidiary's creditors and preferred shareholders, except to the extent Morgan Stanley may itself be a creditor with recognized claims against the subsidiary or a holder of preferred stock of the subsidiary.

Other Rights and Preferences. There are no preemptive or other subscription rights, conversion rights or redemption or sinking fund provisions with respect to shares of Morgan Stanley's common stock. All of the issued shares of Morgan Stanley's common stock are fully paid and non-assessable.

Listing. Morgan Stanley's common stock is traded on the New York Stock Exchange under the trading symbol "MS."

DESCRIPTION OF DEPOSITARY SHARES REPRESENTING INTERESTS IN SHARES OF PREFERRED STOCK

The following description is a summary and does not purport to be complete. You should refer to our Amended and Restated Certificate of Incorporation, the certificate of designation relating to each series of Listed Preferred Stock (as defined below) and the deposit agreement relating to each series of depositary shares for the complete

terms of that series of Listed Preferred Stock and related depositary shares. Copies of our Amended and Restated Certificate of Incorporation and these certificates of designations and deposit agreements are incorporated by reference as Exhibits to the Form 10-K. We encourage you to read these documents.

Depositary Shares

As of December 31, 2022, Morgan Stanley has the following depositary shares registered under Section 12 of the Exchange Act:

- Depositary Shares, each representing 1/1,000th interest in a share of Floating Rate Non-Cumulative Preferred Stock, Series A, $0.01 par value, which is referred to as the Series A Preferred Stock;
- Depositary Shares, each representing 1/1,000th interest in a share of Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series E, $0.01 par value, which is referred to as the Series E Preferred Stock;
- Depositary Shares, each representing 1/1,000th interest in a share of Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series F, $0.01 par value, which is referred to as the Series F Preferred Stock;
- Depositary Shares, each representing 1/1,000th interest in a share of Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series I, $0.01 par value, which is referred to as the Series I Preferred Stock;
- Depositary Shares, each representing 1/1,000th interest in a share of Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series K, $0.01 par value, which is referred to as the Series K Preferred Stock;
- Depositary Shares, each representing 1/1,000th interest in a share of 4.875% Non-Cumulative Preferred Stock, Series L, $0.01 par value, which is referred to as the Series L Preferred Stock;
- Depositary Shares, each representing 1/1,000th interest in a share of 4.250% Non-Cumulative Preferred Stock, Series O, $0.01 par value, which is referred to as the Series O Preferred Stock; and
- Depositary Shares, each representing 1/1,000th interest in a share of 6.500% Non-Cumulative Preferred Stock, Series P, $0.01 par value, which is referred to as the Series P Preferred Stock.

Morgan Stanley refers to the above series of preferred stock represented by depositary shares collectively as the "Listed Preferred Stock."

The shares of each series of Listed Preferred Stock have been deposited under a deposit agreement for such series among Morgan Stanley, The Bank of New York Mellon, acting as depositary, which is referred to as the Preferred Stock Depositary, and the holders from time to time of depositary receipts issued under the agreement (each such deposit agreement, with respect to the series of Listed Preferred Stock to which it relates, a "deposit agreement"). Subject to the terms of the deposit agreement, each holder of a depositary share will be entitled, in proportion to the fraction of a share of Listed Preferred Stock represented by that depositary share, to all the rights and preferences of the Listed Preferred Stock represented by that depositary share, including dividend, voting and liquidation rights.

The depositary shares are evidenced by depositary receipts issued under the deposit agreement. Depositary receipts are distributed to those persons purchasing the fractional shares of the related series of Listed Preferred Stock. Immediately following the issuance of shares of a series of Listed Preferred Stock, Morgan Stanley deposited those shares with the Preferred Stock Depositary, which then issued and delivered the depositary receipts to the purchasers. Depositary receipts have been and will only be issued evidencing whole depositary shares. A depositary receipt may evidence any number of whole depositary shares.

Dividends and Other Distributions. The Preferred Stock Depositary will distribute all cash dividends or other cash distributions received on the related series of Listed Preferred Stock to the record holders of depositary receipts relating to those series in proportion to the number of the depositary shares evidenced by depositary receipts those holders own.

If Morgan Stanley makes a distribution other than in cash, the Preferred Stock Depositary will distribute the property it receives to the record holders of depositary receipts in proportion to the number of depositary shares evidenced by depositary receipts those holders own, unless the Preferred Stock Depositary determines that the distribution cannot be made proportionately among those holders or that it is not feasible to make the distribution. In that event, the Preferred Stock Depositary may, with Morgan Stanley's approval, sell the property and distribute the net proceeds to the holders in proportion to the number of depositary shares evidenced by depositary receipts they own.

The amount distributed to holders of depositary shares will be reduced by any amounts required to be withheld by Morgan Stanley or the Preferred Stock Depositary on account of taxes or other governmental charges.

Withdrawal of Stock. Upon surrender of the depositary receipts at the corporate trust office of the Preferred Stock Depositary and upon payment of the taxes, charges and fees provided for in the deposit agreement and compliance with any other requirement of the deposit agreement, the holder of the depositary shares evidenced by those depositary receipts is entitled to delivery of the number of whole shares of the related series of Listed Preferred Stock and all money or other property, if any, represented by those shares. Holders of depositary receipts representing any number of whole shares of Listed Preferred Stock will be entitled to receive whole shares of the related series of Listed Preferred Stock, but those holders of whole shares of Listed Preferred Stock will not thereafter be entitled to deposit those shares of Listed Preferred Stock with the Preferred Stock Depositary or to receive depositary shares therefor. If the depositary receipts delivered by the holder evidence a number of depositary shares in excess of the number representing whole shares of the related series of Listed Preferred Stock to be withdrawn, the Preferred Stock Depositary will deliver to the holder at the same time a new depositary receipt evidencing the excess number of depositary shares.

Voting the Listed Preferred Stock. Upon receiving notice of any meeting at which the holders of any series of the Listed Preferred Stock are entitled to vote, the Preferred Stock Depositary will mail the information contained in the notice of the meeting to the record holders of the depositary receipts relating to that series of Listed Preferred Stock. Each record holder of the depositary receipts on the record date, which will be the same date as the record date for the related series of Listed Preferred Stock, may instruct the Preferred Stock Depositary how to exercise his or her voting rights. The Preferred Stock Depositary will endeavor, insofar as practicable, to vote or cause to be voted the maximum number of whole shares of the Listed Preferred Stock represented by those depositary shares in accordance with those instructions received sufficiently in advance of the meeting, and Morgan Stanley will agree to take all reasonable action that may be deemed necessary by the Preferred Stock Depositary in order to enable the Preferred Stock Depositary to do so. The Preferred Stock Depositary will abstain from voting shares of the Listed Preferred Stock for which it does not receive specific instructions from the holder of the depositary shares representing them.

Redemption of Depositary Shares. Depositary shares will be redeemed from any proceeds received by the Preferred Stock Depositary resulting from the redemption, in whole or in part, of the series of the Listed Preferred Stock represented by those depositary shares. The redemption price per depositary share will equal the applicable fraction of the redemption price per share payable with respect to the series of the Listed Preferred Stock. If Morgan Stanley redeems shares of a series of Listed Preferred Stock held by the Preferred Stock Depositary, the Preferred Stock Depositary will redeem as of the same redemption date the number of depositary shares representing the shares of Listed Preferred Stock that it redeems. If less than all the depositary shares will be redeemed, the depositary shares to be redeemed will be selected by lot or substantially equivalent method determined by the Preferred Stock Depositary.

After the date fixed for redemption, the depositary shares called for redemption will no longer be deemed to be outstanding, and all rights of the holders of the depositary shares will cease, except the right to receive the monies payable and any other property to which the holders were entitled upon the redemption upon surrender to the Preferred Stock Depositary of the depositary receipts evidencing the depositary shares. Any funds deposited by Morgan Stanley with the Preferred Stock Depositary for any depositary shares that the holders fail to redeem will be returned to it after a period of two years from the date the funds are deposited.

Amendment and Termination of the Deposit Agreement. Morgan Stanley may amend the form of depositary receipt evidencing the depositary shares and any provision of the deposit agreement at any time and from time to time by agreement with the Preferred Stock Depositary. However, any amendment that materially and adversely alters the rights of the holders of depositary receipts will not be effective unless it has been approved by the holders of at least a majority of the depositary shares then outstanding, and no amendment may impair the right of any holder of any depositary receipts, described above under "-Withdrawal of Stock," to receive shares of the related series of Listed Preferred Stock and any money or other property represented by those depositary shares, except in order to comply with mandatory provisions of applicable law. Morgan Stanley may terminate the deposit agreement at any time with at least 60 days' prior written notice to the Preferred Stock Depositary. Within 30 days of the date of the notice, the Preferred Stock Depositary will deliver or make available for delivery to holders of depositary receipts, upon surrender of the depositary receipts evidencing the depositary shares and upon payment of any applicable taxes or governmental charges to be paid by the holders as described below, the number of whole shares of the related series of Listed Preferred Stock as are represented by the depositary receipts. The deposit agreement will automatically terminate after there has been a final distribution on the related series of Listed Preferred Stock in connection with any liquidation, dissolution or winding up of Morgan Stanley and that distribution has been made to the holders of depositary shares.

Charges of Preferred Stock Depositary. Morgan Stanley will pay all transfer and other taxes and governmental charges arising solely from the existence of the depositary arrangements. Morgan Stanley will pay all charges of the Preferred Stock Depositary in connection with the initial deposit of the related series of Listed Preferred Stock, the

initial issuance of the depositary shares, all withdrawals of shares of the related series of Listed Preferred Stock by holders of depositary shares and the registration of transfers of title to any depositary shares. However, holders of depositary shares will pay other transfer and other taxes and governmental charges and the other charges expressly provided in the deposit agreement to be for their accounts.

Limitation on Liability of Company and Preferred Stock Depositary. Neither the Preferred Stock Depositary nor Morgan Stanley will be liable if it is prevented or delayed by law, by any provision of Morgan Stanley's certificate of incorporation or of the depositary shares or by any circumstance beyond its control from performing its obligations under the deposit agreement. The obligations of Morgan Stanley and the Preferred Stock Depositary under the deposit agreement will be limited to performance with best judgment and in good faith of their duties thereunder, except that they will be liable for negligence or willful misconduct in the performance of their duties thereunder, and they will not be obligated to appear in, prosecute or defend any legal proceeding related to any depositary receipts, depositary shares or related series of Listed Preferred Stock unless satisfactory indemnity is furnished.

Corporate Trust Office of Preferred Stock Depositary. The address of the Preferred Stock Depositary's corporate trust office is 240 Greenwich Street, 7E, New York, New York 10286. The Preferred Stock Depositary will act as transfer agent, registrar and redemption agent for depositary receipts.

Resignation and Removal of Preferred Stock Depositary. The Preferred Stock Depositary may resign at any time by delivering to Morgan Stanley written notice of its election to do so, and Morgan Stanley may at any time remove the Preferred Stock Depositary. Any resignation or removal will take effect upon the appointment of a successor Preferred Stock Depositary. A successor must be appointed by Morgan Stanley within 60 days after delivery of the notice of resignation or removal and must be a bank or trust company having its principal office in the United States and a combined capital and surplus of at least $50,000,000.

Reports to Holders. Morgan Stanley will deliver all required reports and communications to holders of the Listed Preferred Stock to the Preferred Stock Depositary, and it will forward those reports and communications to the holders of depositary shares.

Inspection by Holders. Upon request, the Preferred Stock Depositary will provide for inspection to the holders of depositary shares the transfer books of the depositary and the list of holders of receipts; provided that any requesting holder certifies to the Preferred Stock Depositary that such inspection is for a proper purpose reasonably related to such person's interest as an owner of depositary shares evidenced by the receipts.

Listing. The depositary shares representing the Series A Preferred Stock, the Series E Preferred Stock, the Series F Preferred Stock, the Series I Preferred Stock, the Series K Preferred Stock, the Series L Preferred Stock, the Series O Preferred Stock and the Series P Preferred Stock are traded on the New York Stock Exchange under the trading symbols "MS/PA," "MS/PE," "MS/PF," "MS/PI," "MS/PK," "MS/PL," "MS/PO" and "MS/PP," respectively.

Existing Preferred Stock

As described above, Morgan Stanley has depositary shares registered under Section 12 of the Exchange Act that represent interests in the Listed Preferred Stock. This section describes the Listed Preferred Stock, as well as other series of preferred stock issued by Morgan Stanley that are also relevant to describing the Listed Preferred Stock.

Unless otherwise indicated, the terms and provisions described below relate to each of the Series A Preferred Stock, the Series C Preferred Stock, the Series E Preferred Stock, the Series F Preferred Stock, the Series I Preferred Stock, the Series K Preferred Stock, the Series L Preferred Stock, the Series M Preferred Stock, the Series N Preferred Stock, the Series O Preferred Stock and the Series P Preferred Stock (collectively, the "Existing Preferred Stock"). Other than as described below, the terms of the Series A Preferred Stock, the Series C Preferred Stock, the Series E Preferred Stock, the Series F Preferred Stock, the Series I Preferred Stock, the Series K Preferred Stock, the Series L Preferred Stock, the Series M Preferred Stock, the Series N Preferred Stock, the Series O Preferred Stock and the Series P Preferred Stock are substantially similar.

Rank. Each series of Existing Preferred Stock ranks on a parity with each other and with the offered preferred stock as to payment of dividends and amounts payable upon liquidation, dissolution or winding up, except that the certificate of designation for the Series A Preferred Stock states that such series ranks, as to dividends, junior to any future issuance of cumulative preferred stock. Each series of Existing Preferred Stock ranks prior to the common stock as to payment of dividends and amounts payable on liquidation, dissolution or winding up. The shares of the Existing Preferred Stock are fully paid and nonassessable and have no preemptive rights.

Conversion. No shares of the Series A Preferred Stock, the Series C Preferred Stock, the Series E Preferred Stock, the Series F Preferred Stock, the Series I Preferred Stock, the Series K Preferred Stock, the Series L Preferred Stock, the Series M Preferred Stock, the Series N Preferred Stock, the Series O Preferred Stock or the Series P Preferred Stock are convertible at the option of the holder, or otherwise, into common stock.

Dividends. Holders of Existing Preferred Stock are entitled to receive, when and as declared by the Board of Directors out of legally available funds, cash dividends payable quarterly (except with respect to the Series M Preferred Stock and the Series N Preferred Stock, for which dividends are currently payable semi-annually) at the rate specified below.

- Series A Preferred Stock: noncumulative cash dividends at a per annum rate equal to the greater of (1) 4% and (2) three-month U.S. Dollar LIBOR on the related dividend determination date plus .70%.
- Series C Preferred Stock: noncumulative cash dividends at a per annum rate equal to 10%.
- Series E Preferred Stock: noncumulative cash dividends at a per annum rate equal to 7.125% with respect to each dividend period from and including September 30, 2013 to, but excluding, October 15, 2023 and at a rate per annum equal to the three-month U.S. dollar LIBOR on the related dividend determination date plus 4.32% with respect to each dividend period from and including October 15, 2023.
- Series F Preferred Stock: noncumulative cash dividends at a per annum rate equal to 6.875% with respect to each dividend period from and including December 10, 2013 to, but excluding, January 15, 2024 and at a rate per annum equal to the three-month U.S. dollar LIBOR on the related dividend determination date plus 3.94% with respect to each dividend period from and including January 15, 2024.
- Series I Preferred Stock: noncumulative cash dividends at a per annum rate equal to 6.375% with respect to each dividend period from and including September 18, 2014 to, but excluding, October 15, 2024 and at a rate per annum equal to the three-month U.S. dollar LIBOR on the related dividend determination date plus 3.708% with respect to each dividend period from and including October 15, 2024.
- Series K Preferred Stock: noncumulative cash dividends at a per annum rate equal to 5.85% with respect to each dividend period from and including January 31, 2017 to, but excluding, April 15, 2027 and at a rate per annum equal to the three-month U.S. dollar LIBOR on the related dividend determination date plus 3.491% with respect to each dividend period from and including April 15, 2027.
- Series L Preferred Stock: noncumulative cash dividends at a per annum rate equal to 4.875%.
- Series M Preferred Stock: noncumulative cash dividends at a per annum rate equal to 5.875% with respect to each dividend period from and including September 15, 2020 to, but excluding, September 15, 2026 and at a rate per annum equal to the three-month U.S. dollar LIBOR on the related dividend determination date plus 4.435% with respect to each dividend period from and including September 15, 2026.
- Series N Preferred Stock: noncumulative cash dividends at a per annum rate equal to 5.30% with respect to each dividend period from and including September 15, 2020 to, but excluding, March 15, 2023 and at a rate per annum equal to the three-month U.S. dollar LIBOR on the related dividend determination date plus 3.16% with respect to each dividend period from and including March 15, 2023.
- Series O Preferred Stock: noncumulative cash dividends at a per annum rate equal to 4.250%.
- Series P Preferred Stock: noncumulative cash dividends at a per annum rate equal to 6.500%.

Each series of Existing Preferred Stock is noncumulative preferred stock. Accordingly, if the Board of Directors (or a duly authorized committee thereof) does not declare a dividend on the Series A Preferred Stock, the Series C Preferred Stock, the Series E Preferred Stock, the Series F Preferred Stock, the Series I Preferred Stock, the Series K Preferred Stock, the Series L Preferred Stock, the Series M Preferred Stock, the Series N Preferred Stock, the Series O Preferred Stock or the Series P Preferred Stock in respect of any dividend period before the related dividend payment date, Morgan Stanley will have no obligation to pay a dividend for that dividend period on such dividend payment date or at any future time.

Each series of Existing Preferred Stock will be junior as to payment of dividends to any preferred stock that may be issued in the future that is expressly senior as to dividends to the Existing Preferred Stock. If at any time Morgan Stanley has failed to pay accumulated dividends on any preferred stock that is senior to a series of Existing Preferred Stock as to payment of dividends, Morgan Stanley may not pay any dividends on the junior series of Existing Preferred Stock or redeem or otherwise repurchase any shares of the junior series of Existing Preferred Stock until it has paid in full, or set aside for payment, such accumulated but unpaid dividends on those senior shares.

Morgan Stanley will not declare or pay or set aside for payment, dividends for the latest dividend period on any series of offered preferred stock ranking on a parity as to payment of dividends with any series of Existing Preferred Stock, unless it also declares or pays or sets aside for payment the accrued dividends on the outstanding shares of such series for the latest dividend payment period. Morgan Stanley must declare, pay or set aside for payment any

amounts on the offered preferred stock ratably in proportion to the respective amounts of unpaid dividends described in the preceding sentence.

Except as described above, and subject to some additional exceptions set forth in the relevant certificate of designations, unless Morgan Stanley has paid full accrued dividends on the outstanding shares of each series of Existing Preferred Stock for the latest dividend payment period with respect to each such series, Morgan Stanley may not during a divided period for any series:

- declare or pay a dividend or distribution on common stock or any preferred stock that ranks junior to such series as to dividend rights and as to rights on liquidation, dissolution or winding up, or
- redeem, purchase or otherwise acquire Morgan Stanley's common stock or any preferred stock that ranks junior to, or, in the case of Series M Preferred Stock and Series N Preferred Stock, that ranks junior to or on a parity with, such series as to dividend rights and as to rights on liquidation, dissolution or winding up.

Redemption. The Existing Preferred Stock is not and will not be subject to any mandatory redemption, sinking fund provision or other similar provision. The Existing Preferred Stock is redeemable, subject to receipt of any required regulatory approvals, in whole or in part, upon 30 days' notice as follows:

- the Series A Preferred Stock is redeemable at a redemption price of $25,000.00 per share plus accrued and unpaid dividends, regardless of whether dividends are actually declared, to but excluding the date of redemption;
- the Series C Preferred Stock is redeemable at a redemption price of $1,100.00 per share plus accrued and unpaid dividends, regardless of whether dividends are actually declared, to but excluding the date of redemption;
- the Series E Preferred Stock is redeemable at a redemption price of $25,000.00 per share plus any declared and unpaid dividends to but excluding the date fixed for redemption (i) in whole or in part on or after October 15, 2023 or (ii) in whole but not in part at any time within 90 days of certain changes to regulatory capital requirements;
- the Series F Preferred Stock is redeemable at a redemption price of $25,000.00 per share plus any declared and unpaid dividends to but excluding the date fixed for redemption (i) in whole or in part on or after January 15, 2024 or (ii) in whole but not in part at any time within 90 days of certain changes to regulatory capital requirements;
- the Series I Preferred Stock is redeemable at a redemption price of $25,000.00 per share plus any declared and unpaid dividends to but excluding the date fixed for redemption (i) in whole or in part on or after October 15, 2024 or (ii) in whole but not in part at any time within 90 days of certain changes to regulatory capital requirements;
- the Series K Preferred Stock is redeemable at a redemption price of $25,000.00 per share plus any declared and unpaid dividends to but excluding the date fixed for redemption (i) in whole or in part on or after April 15, 2027 or (ii) in whole but not in part at any time within 90 days of certain changes to regulatory capital requirements;
- the Series L Preferred Stock is redeemable at a redemption price of $25,000.00 per share plus any declared and unpaid dividends to but excluding the date fixed for redemption (i) in whole or in part on or after January 15, 2025 or (ii) in whole but not in part at any time within 90 days of certain changes to regulatory capital requirements;
- the Series M Preferred Stock is redeemable at a redemption price of $1,000.00 per share plus any declared and unpaid dividends to but excluding the date fixed for redemption (i) in whole or in part on or after September 15, 2026 or (ii) in whole but not in part at any time within 90 days of certain changes to regulatory capital requirements;
- the Series N Preferred Stock is redeemable at a redemption price of $100,000.00 per share plus any declared and unpaid dividends to but excluding the date fixed for redemption (i) in whole or in part after October 2, 2025 or (ii) in whole but not in part at any time within 90 days of certain changes to regulatory capital requirements;
- the Series O Preferred Stock is redeemable at a redemption price of $25,000.00 per share plus any declared and unpaid dividends to but excluding the date fixed for redemption (i) in whole or in part on or after January 15, 2027 or (ii) in whole but not in part at any time within 90 days of certain changes to regulatory capital requirements; and

- the Series P Preferred Stock is redeemable at a redemption price of $25,000.00 per share plus any declared and unpaid dividends to but excluding the date fixed for redemption (i) in whole or in part on or after October 15, 2027 or (ii) in whole but not in part at any time within 90 days of certain changes to regulatory capital requirements.

Liquidation Rights. In the event of any liquidation, dissolution or winding up of Morgan Stanley, the holders of shares of Existing Preferred Stock will be entitled to receive, out of the assets of Morgan Stanley available for distribution to stockholders, liquidating distributions before any distribution is made to holders of any class or series of capital stock ranking junior to the Existing Preferred Stock as to rights upon liquidation, dissolution or winding up of Morgan Stanley's common stock. The liquidating distribution that each series of Existing Preferred Stock is entitled to receive is as follows:

- the Series A Preferred Stock will be entitled to receive a liquidating distribution in an amount equal to $25,000.00 per share, together with an amount equal to all dividends, if any, that have been declared but not paid with respect to such series prior to the date of payment of such distribution (but without any accumulation in respect of dividends that have not been declared prior to such payment date);

- the Series C Preferred Stock will be entitled to receive a liquidating distribution in an amount equal to $1,000 per share, together with an amount equal to all dividends, if any, that have been declared but not paid prior to the date of payment of such distribution (but without any accumulation in respect of dividends that have not been declared prior to such payment date);

- the Series E Preferred Stock will be entitled to receive a liquidating distribution in an amount equal to $25,000.00 per share, together with an amount equal to all dividends, if any, that have been declared but not paid with respect to such series prior to the date of payment of such distribution (but without any accumulation in respect of dividends that have not been declared prior to such payment date);

- the Series F Preferred Stock will be entitled to receive a liquidating distribution in an amount equal to $25,000.00 per share, together with an amount equal to all dividends, if any, that have been declared but not paid with respect to such series prior to the date of payment of such distribution (but without any accumulation in respect of dividends that have not been declared prior to such payment date);

- the Series I Preferred Stock will be entitled to receive a liquidating distribution in an amount equal to $25,000.00 per share, together with an amount equal to all dividends, if any, that have been declared but not paid with respect to such series prior to the date of payment of such distribution (but without any accumulation in respect of dividends that have not been declared prior to such payment date);

- the Series K Preferred Stock will be entitled to receive a liquidating distribution in an amount equal to $25,000.00 per share, together with an amount equal to all dividends, if any, that have been declared but not paid with respect to such series prior to the date of payment of such distribution (but without any accumulation in respect of dividends that have not been declared prior to such payment date);

- the Series L Preferred Stock will be entitled to receive a liquidating distribution in an amount equal to $25,000.00 per share, together with an amount equal to all dividends, if any, that have been declared but not paid with respect to such series prior to the date of payment of such distribution (but without any accumulation in respect of dividends that have not been declared prior to such payment date);

- the Series M Preferred Stock will be entitled to receive a liquidating distribution in an amount equal to $1,000.00 per share, together with an amount equal to all dividends, if any, that have been declared but not paid with respect to such series prior to the date of payment of such distribution (but without any accumulation in respect of dividends that have not been declared prior to such payment date);

- the Series N Preferred Stock will be entitled to receive a liquidating distribution in an amount equal to $100,000.00 per share, together with an amount equal to all dividends, if any, that have been declared but not paid with respect to such series prior to the date of payment of such distribution (but without any accumulation in respect of dividends that have not been declared prior to such payment date);

- the Series O Preferred Stock will be entitled to receive a liquidating distribution in an amount equal to $25,000.00 per share, together with an amount equal to all dividends, if any, that have been declared but not paid with respect to such series prior to the date of payment of such distribution (but without any accumulation in respect of dividends that have not been declared prior to such payment date); and

- the Series P Preferred Stock will be entitled to receive a liquidating distribution in an amount equal to $25,000.00 per share, together with an amount equal to all dividends, if any, that have been declared but not paid with respect to such series prior to the date of payment of such distribution (but without any accumulation in respect of dividends that have not been declared prior to such payment date).

However, holders of shares of the Existing Preferred Stock will not be entitled to receive the liquidation price of their shares until Morgan Stanley has paid or set aside an amount sufficient to pay in full the liquidation preference of any class or series of Morgan Stanley's capital stock ranking senior as to rights upon liquidation, dissolution or winding up.

If, upon any liquidation, dissolution or winding up of Morgan Stanley, assets of Morgan Stanley then distributable are insufficient to pay in full the amounts payable with respect to the Existing Preferred Stock and any other preferred stock ranking on a parity with the Existing Preferred Stock as to rights upon liquidation, dissolution or winding up, the holders of the Existing Preferred Stock and of that other preferred stock will share ratably in any distribution in proportion to the full respective preferential amounts to which they are entitled. After Morgan Stanley has paid the full amount of the liquidating distribution to which they are entitled, the holders of the Existing Preferred Stock will not be entitled to any further participation in any distribution of assets by Morgan Stanley.

Voting Rights. Holders of Existing Preferred Stock do not have any voting rights except as described below or as otherwise from time to time required by law. Whenever dividends on any series of Existing Preferred Stock have not been declared and paid for the equivalent of six or more dividend periods (or, for the Series M Preferred Stock and the Series N Preferred Stock, three semi-annual or six quarterly full dividend periods), whether or not consecutive, the authorized number of directors of Morgan Stanley shall be automatically increased by two and the holders of shares of Existing Preferred Stock, voting together as a class with holders of any and all other series of preferred stock having similar voting rights that are exercisable, will be entitled to elect two directors to fill such newly created directorships at Morgan Stanley's next annual meeting of stockholders (or at a special meeting called for that purpose prior to such next annual meeting) and at each subsequent annual meeting. These voting rights will continue for each series of Existing Preferred Stock until dividends on such shares have been fully paid (or declared and a sum sufficient for the payment of such dividends shall have been set aside for such payment) for at least four regular dividend periods (or, for the Series M Preferred Stock and the Series N Preferred Stock, the equivalent of two consecutive semi-annual dividend periods or four consecutive quarterly dividend periods) following the nonpayment. The term of office of all directors elected by the holders of preferred stock will terminate immediately upon the termination of the right of holders of preferred stock to vote for directors.

So long as any shares of Existing Preferred Stock remain outstanding, Morgan Stanley will not, without the consent of the holders of at least two-thirds of the shares of Existing Preferred Stock outstanding at the time, voting together as a single class with holders of any and all other series of preferred stock having similar voting rights that are exercisable

- amend or alter any provision of Morgan Stanley's amended and restated certificate of incorporation or the certificate of designations of preferences and rights with respect to any series of the Existing Preferred Stock to authorize or create, or increase the authorized amount of, any class or series of stock ranking senior to any series of Existing Preferred Stock with respect to the payment of dividends or the distribution of assets upon liquidation, dissolution or winding up;

- amend, alter or repeal any provision of Morgan Stanley's amended and restated certificate of incorporation or the certificate of designations of preferences and rights with respect to any series of the Existing Preferred Stock if such amendment, alteration or repeal would cause a material and adverse effect with respect to the special rights, preferences, privileges and voting powers of any Existing Preferred Stock, whether by merger, consolidation or otherwise. For purposes of the preceding sentence any increase in the authorized amount of common stock or preferred stock or the creation and issuance of other series of Morgan Stanley's common stock or preferred stock ranking on a parity with or junior to the Existing Preferred Stock as to dividends and the distribution of assets upon liquidation, dissolution or winding up will not be deemed to materially and adversely affect the special rights, preferences, privileges and voting powers of any Existing Preferred Stock; or

- consummate any binding share exchange or reclassification involving any series of Existing Preferred Stock, or merger or consolidation of Morgan Stanley with another entity, unless in each case (x) the shares of Existing Preferred Stock remain outstanding or are converted into or exchanged for preference securities of the surviving or resulting entity or its ultimate parent, and (y) such shares remain outstanding or such preference securities, as the case may be, have such rights, preferences, privileges and voting powers, taken as a whole, as are not materially less favorable to the holders thereof than the rights, preferences, privileges and voting powers of the Existing Preferred Stock immediately prior to such consummation, taken as a whole.

Agents and Registrar for Existing Preferred Stock. The transfer agent, dividend disbursing agent and registrar for each series of Existing Preferred Stock is The Bank of New York Mellon.

DESCRIPTION OF THE GLOBAL MEDIUM-TERM NOTES, SERIES A OF MORGAN STANLEY FINANCE LLC (AND MORGAN STANLEY'S GUARANTEES WITH RESPECT THERETO)

The following description of the Notes (as defined below) is a summary and does not purport to be complete. It is subject to and qualified in its entirety by reference to the MSFL Senior Debt Indenture (as defined below), which is incorporated by reference as an Exhibit to the Form 10-K. We encourage you to read the MSFL Senior Debt Indenture for additional information.

Morgan Stanley Finance LLC ("MSFL"), a wholly-owned finance subsidiary of Morgan Stanley, issued its (i) Global Medium-Term Notes, Series A, Fixed Rate Step-Up Senior Notes Due 2026 (the "2026 Notes") on February 22, 2016 and (ii) Global Medium-Term Notes, Series A, Floating Rate Notes Due 2029 (the "2029 Notes") on June 27, 2022. Morgan Stanley refers to the 2026 Notes and the 2029 Notes collectively as the "Notes."

As of December 31, 2022, the Notes (and Morgan Stanley's guarantees with respect thereto) are registered under Section 12 of the Exchange Act:

The Notes are senior debt securities of MSFL. The Notes constitute part of its senior debt and rank on a parity with all of its other unsecured and unsubordinated debt. The Notes are issued under a Senior Indenture dated as of February 16, 2016 among MSFL, Morgan Stanley, as guarantor, and The Bank of New York Mellon, a New York banking corporation, as trustee. That indenture, as it has been and may be supplemented from time to time (to the extent that such supplements apply to the Notes), is called the MSFL Senior Debt Indenture. The Notes are fully and unconditionally guaranteed by Morgan Stanley and holders of the Notes should assume that in any bankruptcy, resolution or similar proceeding, they would not have any priority over and should be treated *pari passu* with the claims of other unsecured, unsubordinated creditors of Morgan Stanley, including holders of Morgan Stanley-issued securities.

The Series A medium-term notes issued under the MSFL Senior Debt Indenture (including the Notes) constitute a single series under that indenture, together with any medium-term notes MSFL issues in the future under that indenture that it designates as being part of that series. MSFL may create and issue additional notes with the same terms as previous issuances of Series A medium-term notes, so that the additional notes will be considered as part of the same issuance as the earlier notes.

The Notes are not deposits or savings accounts and are not insured by the Federal Deposit Insurance Corporation or any other governmental agency or instrumentality, nor are they obligations of, or guaranteed by, a bank.

The terms of the MSFL Senior Debt Indenture have been amended since the 2026 Notes were issued and those amendments do not apply to the 2026 Notes. The description of the terms of the MSFL Senior Debt Indenture set forth under "General Terms of the 2026 Notes" below is of the terms that apply to the 2026 Notes, which differ from those described under "General Terms of the 2029 Notes" below that apply to the 2029 Notes and other securities issued by MSFL under the MSFL Senior Debt Indenture after such amendments.

Global Medium-Term Notes, Series A, Fixed Rate Step-Up Senior Notes Due 2026

MSFL issued the 2026 Notes in an aggregate principal amount of $5,000,000. The 2026 Notes were issued in minimum denominations of $1,000 and integral multiples of $1,000 in excess thereof. The 2026 Notes will mature on February 23, 2026. As of December 31, 2022, $5,000,000 in aggregate principal amount of the 2026 Notes was outstanding.

Listing

The 2026 Notes are traded on the New York Stock Exchange under the trading symbol "MS/26C."

Interest Payments

The 2026 Notes bear interest from the date of issuance as follows:

- from and including the original issue date to but excluding February 23, 2021: 3.50% per annum;
- from and including February 23, 2021 to but excluding February 23, 2023: 3.75% per annum;
- from and including February 23, 2023 to but excluding February 23, 2024: 4.00% per annum;
- from and including February 23, 2024 to but excluding February 23, 2025: 4.25% per annum; and

◦ from and including February 23, 2025 to but excluding the maturity date: 5.00% per annum.

How Interest Is Calculated. Interest on the 2026 Notes will be computed on the basis of a 360-day year of twelve 30-day months.

How Interest Accrues. Interest on the 2026 Notes accrues from and including the most recent interest payment date to which interest has been paid or duly provided for. Interest will accrue to but excluding the next interest payment date, or, if earlier, the date on which the principal has been paid or duly made available for payment, except as described below under "-If a Payment Date Is Not a Business Day."

When Interest Is Paid. Payments of interest on the 2026 Notes will be made on each February 23 and August 23, commencing August 23, 2016.

Amount of Interest Payable. Interest payments for the 2026 Notes will include accrued interest from and including the last date in respect of which interest has been paid to but excluding the relevant interest payment date or date of maturity.

If a Payment Date Is Not a Business Day. If any scheduled interest payment date is not a business day, the issuer will pay interest on the next business day, but interest on that payment will not accrue during the period from and after the scheduled interest payment date. If the scheduled maturity date is not a business day, the issuer may pay interest, if any, and principal on the next succeeding business day, but interest on that payment will not accrue during the period from and after the scheduled maturity date. For these purposes, a "business day" means any day, other than a Saturday or Sunday, that is neither a legal holiday nor a day on which banking institutions are authorized or required by law or regulation to close in The City of New York.

General Terms of the 2026 Notes

In the below sections, all references to "debt securities" refer to Series A medium-term notes issued by MSFL under the MSFL Senior Debt Indenture. The following description of the terms of the debt securities contains certain general terms that may apply to the debt securities, including the 2026 Notes.

MSFL has summarized below the material provisions of the MSFL Senior Debt Indenture and the debt securities, including the guarantee of Morgan Stanley. These descriptions are only summaries, and each investor should refer to the MSFL Senior Debt Indenture and any applicable supplements thereto, which describe completely the terms and definitions summarized below and contain additional information regarding the debt securities. Where appropriate, MSFL uses parentheses to refer you to the particular sections of the MSFL Senior Debt Indenture. Any reference to particular sections or defined terms of the MSFL Senior Debt Indenture in any statement qualifies the entire statement and incorporates by reference the applicable section or definition into that statement.

Morgan Stanley Guarantee of Debt Securities Issued by MSFL

The payments due, including any property deliverable under any debt securities issued by MSFL, will be fully and unconditionally guaranteed by Morgan Stanley. If, for any reason, MSFL does not make any required payment in respect of any debt security issued by it when due, Morgan Stanley will cause the payment to be made at the same address at which MSFL is obligated to make such payment. MSFL has no independent operations beyond the issuance and administration of its securities and will have no independent assets available for distributions to holders of MSFL securities if they make claims in respect of the securities in a bankruptcy, resolution or similar proceeding. Accordingly, holders will have recourse only to a single claim against Morgan Stanley and its assets under the guarantee. Morgan Stanley's guarantees of the payments due on debt securities issued by MSFL will be unsecured senior obligations of Morgan Stanley. In addition, if MSFL were to merge with and into Morgan Stanley pursuant to the terms of the MSFL Senior Debt Indenture, the guarantee will terminate.

Indenture

The 2026 Notes are issued under the MSFL Senior Debt Indenture.

Covenants Restricting Pledges, Mergers and Other Significant Corporate Actions

Negative Pledge of Morgan Stanley. Because Morgan Stanley is a holding company, its assets consist primarily of the securities of its subsidiaries. The negative pledge provisions of the MSFL Senior Debt Indenture limit Morgan Stanley's ability to pledge some of these securities. The MSFL Senior Debt Indenture provides that Morgan Stanley will not, and will not permit any subsidiary to, create, assume, incur or guarantee any indebtedness for borrowed money that is secured by a pledge, lien or other encumbrance except for liens specifically permitted by such senior indenture on:

- the voting securities of Morgan Stanley & Co. LLC, Morgan Stanley & Co. International plc, Morgan Stanley Smith Barney LLC or any subsidiary succeeding to any substantial part of the business now conducted by any of those corporations, which are referred to collectively as the "principal subsidiaries," or
- the voting securities of a subsidiary that owns, directly or indirectly, the voting securities of any of the principal subsidiaries, other than directors' qualifying shares,

without making effective provisions so that the guarantee issued under the MSFL Senior Debt Indenture will be secured equally and ratably with indebtedness so secured.

For these purposes, "subsidiary" means any corporation, partnership or other entity of which at the time of determination Morgan Stanley owns or controls directly or indirectly more than 50% of the shares of the voting stock or equivalent interest, and "voting securities" means stock of any class or classes having general voting power under ordinary circumstances to elect a majority of the board of directors, managers or trustees of the relevant subsidiary, other than stock that carries only the conditional right to vote upon the happening of an event, whether or not that event has happened. (MSFL Senior Debt Indenture, Section 13.10).

Merger or Consolidation of MSFL, as Issuer, or Morgan Stanley, as Guarantor, Under the MSFL Senior Debt Indenture. The MSFL Senior Debt Indenture provides that neither MSFL, as issuer, nor Morgan Stanley, as guarantor, will merge or consolidate with any other person, unless:

- MSFL or Morgan Stanley, as applicable, will be the continuing person; or
- the successor person by merger or consolidation to MSFL or Morgan Stanley, as applicable:
  - will be a person organized under the laws of the United States, a state of the United States or the District of Columbia; and
  - will expressly assume all of MSFL's or Morgan Stanley's obligations, as applicable, under the indenture and the debt securities or the guarantees, as applicable, issued under the indenture; and
- immediately after the merger or consolidation, MSFL, Morgan Stanley or that successor person, as the case may be, in its capacity as issuer or guarantor, as applicable, will not be in default in the performance of the covenants and conditions of the indenture applicable to it. (MSFL Senior Debt Indenture, Sections 9.01 and 13.11).

For the avoidance of doubt, the successor person referred to in this section may be Morgan Stanley or any subsidiary of Morgan Stanley.

Sale, Lease or Conveyance by MSFL, as Issuer, or Morgan Stanley, as Guarantor, Under the MSFL Senior Debt Indenture. The MSFL Senior Debt Indenture provides that neither MSFL, as issuer, nor Morgan Stanley, as guarantor, will sell, lease or convey all or substantially all of its assets to any other person, unless:

- the person that acquires all or substantially all of the assets of MSFL or of Morgan Stanley, as applicable:
  - will be a person organized under the laws of the United States, a state of the United States or the District of Columbia; and
  - will expressly assume all of MSFL's or Morgan Stanley's obligations, as applicable, under the indenture and the debt securities or the guarantees, as applicable, issued under the indenture; and
- immediately after the sale, lease or conveyance, that acquiring person, in its capacity as issuer or guarantor, as applicable, will not be in default in the performance of the covenants and conditions of the indenture applicable to it. (MSFL Senior Debt Indenture, Sections 9.01 and 13.11).

For the avoidance of doubt, the acquiring person referred to in this section may be Morgan Stanley or any subsidiary of Morgan Stanley.

Absence of Protections against All Potential Actions of the Issuer and the Guarantor. There are no covenants or other provisions in the MSFL Senior Debt Indenture that would afford holders of debt securities additional protection in the event of a recapitalization transaction, a change of control of the issuer or the guarantor, as applicable, or a highly leveraged transaction. The merger covenants described above would only apply if the recapitalization transaction, change of control or highly leveraged transaction were structured to include a merger or consolidation of the issuer or the guarantor, as applicable, or a sale, lease or conveyance of all or substantially all of the assets of the issuer or the guarantor, as applicable.

Events of Default

The MSFL Senior Debt Indenture provides holders of debt securities with remedies if MSFL, as issuer, fails to perform specific obligations or if MSFL becomes bankrupt. The MSFL Senior Debt Indenture permits the issuance of debt securities in one or more series, and, in many cases, whether an event of default has occurred is determined on a series by series basis.

An event of default is defined under the MSFL Senior Debt Indenture, with respect to any series of debt securities issued by MSFL under that indenture, as being:

- default in payment of any principal of the debt securities of that series, either at maturity or upon any redemption, by declaration or otherwise;
- default for 30 days in payment of any interest on any debt securities of that series;
- default for 60 days after written notice in the observance or performance by MSFL of any covenant or agreement in the debt securities of that series or the indenture (other than a covenant or warranty with respect to the debt securities of that series the breach or nonperformance of which is otherwise included in the definition of "event of default");
- events of bankruptcy, insolvency or reorganization of MSFL; or
- any other event of default provided in the supplemental indenture under which that series of debt securities is issued. (MSFL Senior Debt Indenture, Section 5.01).

The 2026 Notes do not have the benefit of any cross-default or cross-acceleration provisions with other indebtedness of MSFL or Morgan Stanley. **In addition, under the MSFL Senior Debt Indenture, a covenant default by Morgan Stanley, as guarantor, or an event of bankruptcy, insolvency or reorganization of Morgan Stanley, as guarantor, does not constitute an event of default**.

Acceleration of Debt Securities upon an Event of Default. The MSFL Senior Debt Indenture provides that:

- if an event of default due to the default in payment of principal of, or any premium or interest on, any series of debt securities issued under that indenture, or due to the default in the performance or breach of any other covenant or warranty of the issuer applicable to the debt securities of that series but not applicable to all outstanding debt securities issued under that indenture occurs and is continuing, either the trustee or the holders of not less than 25% in aggregate principal amount of the outstanding debt securities of each affected series, voting as one class, by notice in writing to the issuer and to the trustee, if given by security holders, may declare the principal of all debt securities of all affected series and interest accrued thereon to be due and payable immediately; and
- if an event of default due to a default in the performance of any other covenants or agreements of the issuer in that indenture applicable to all outstanding debt securities issued under that indenture or due to specified events of bankruptcy, insolvency or reorganization of the issuer, occurs and is continuing, either the trustee or the holders of not less than 25% in aggregate principal amount of all outstanding debt securities issued under that indenture, voting as one class, by notice in writing to the issuer and to the trustee, if given by security holders, may declare the principal of all those debt securities and interest accrued thereon to be due and payable immediately. (MSFL Senior Debt Indenture, Section 5.01).

Notwithstanding these notice provisions, the holders of debt securities issued by MSFL and guaranteed by **Morgan Stanley under the MSFL Senior Debt Indenture have no right to declare the principal of those debt securities and interest accrued thereon to be due and payable immediately if Morgan Stanley fails to observe or perform any covenant under such indenture or in the event of the bankruptcy, insolvency or reorganization of Morgan Stanley, as guarantor of such securities**.

Annulment of Acceleration and Waiver of Defaults. The MSFL Senior Debt Indenture provides that:

In some circumstances, if any and all events of default under that indenture, other than the non-payment of the principal of the securities that has become due as a result of an acceleration, have been cured, waived or otherwise remedied, then the holders of a majority in aggregate principal amount of all series of outstanding debt securities affected, voting as one class, may waive past defaults and rescind and annul past declarations of acceleration of the debt securities. (MSFL Senior Debt Indenture, Section 5.01).

Prior to the acceleration of any debt securities, the holders of a majority in aggregate principal amount of all series of outstanding debt securities with respect to which an event of default has occurred and is continuing, voting as one class, may waive any past default or event of default, other than a default in the payment of principal or

interest (unless such default has been cured and an amount sufficient to pay all matured installments of interest and principal due otherwise than by acceleration has been deposited with the trustee) or a default in respect of a covenant or provision in that indenture that cannot be modified or amended without the consent of the holder of each debt security affected. (MSFL Senior Debt Indenture, Section 5.10).

Indemnification of Trustee for Actions Taken on Your Behalf. The MSFL Senior Debt Indenture contains a provision entitling the trustee, subject to the duty of the trustee during a default to act with the required standard of care, to be indemnified by the holders of debt securities issued under that indenture before proceeding to exercise any trust or power at the request of holders. (MSFL Senior Debt Indenture, Section 6.02). Subject to these provisions and some other limitations, the holders of a majority in aggregate principal amount of each series of outstanding debt securities of each affected series, voting as one class, may direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or exercising any trust or power conferred on the trustee. (MSFL Senior Debt Indenture, Section 5.09).

Limitation on Actions by You as an Individual Holder. The MSFL Senior Debt Indenture provides that no individual holder of debt securities may institute any action against the issuer or the guarantor under that indenture, except actions for payment of overdue principal and interest, unless the following actions have occurred:

◦ the holder must have previously given written notice to the trustee of the continuing default;

◦ the holders of not less than 25% in aggregate principal amount of the outstanding debt securities of each affected series, treated as one class, must have (1) requested the trustee to institute that action and (2) offered the trustee reasonable indemnity;

◦ the trustee must have failed to institute that action within 60 days after receipt of the request referred to above; and

◦ the holders of a majority in principal amount of the outstanding debt securities of each affected series, voting as one class, must not have given directions to the trustee inconsistent with those of the holders referred to above. (MSFL Senior Debt Indenture, Sections 5.06 and 5.09).

Annual Certification. The MSFL Senior Debt Indenture contains a covenant that the issuer will file annually with the trustee a certificate of no default or a certificate specifying any default that exists. (MSFL Senior Debt Indenture, Section 3.05).

Discharge, Defeasance and Covenant Defeasance

The issuer or the guarantor has the ability to eliminate most or all of the obligations of the issuer and the guarantor on any series of debt securities prior to maturity if the issuer or the guarantor complies with the following provisions. (MSFL Senior Debt Indenture, Section 10.01).

Discharge of Indenture. If at any time the issuer has:

◦ paid or caused to be paid the principal of and interest on all of the outstanding debt securities in accordance with their terms (or the guarantor has done the same);

◦ delivered to the trustee for cancellation all of the outstanding debt securities; or

◦ irrevocably deposited with the trustee cash or, in the case of a series of debt securities payable only in U.S. dollars, U.S. government obligations in trust for the benefit of the holders of any series of debt securities issued under that indenture that have either become due and payable, or are by their terms due and payable within one year or are scheduled for redemption within one year, in an amount certified to be sufficient to pay on each date that they become due and payable, the principal of and interest on, and any mandatory sinking fund payments for, those debt securities (or the guarantor has done the same);

and if, in any such case, the issuer or the guarantor also pays or causes to be paid all other sums payable by the issuer or the guarantor under the indenture with respect to the securities of such series, then that indenture shall cease to be of further effect with respect to the securities of such series, except as to certain rights and with respect to the transfer and exchange of securities, rights of the holders to receive payment and certain other rights and except that the deposit of cash or U.S. government obligations for the benefit of holders of a series of debt securities that are due and payable or are due and payable within one year or are scheduled for redemption within one year will discharge obligations under the indenture relating only to that series of debt securities.

Defeasance of a Series of Securities at Any Time. The issuer or the guarantor may also discharge all obligations of the issuer and the guarantor, other than as to transfers and exchanges, under any series of debt securities at any time, which is referred to as "defeasance."

The issuer and the guarantor, may be released with respect to any outstanding series of debt securities from the obligations imposed by Section 13.10 and Section 13.11 and Section 9.01, which sections contain the covenants described above limiting liens and consolidations, mergers, asset sales and leases, and elect not to comply with those sections without creating an event of default or a default. Discharge under those procedures is called "covenant defeasance."

Defeasance or covenant defeasance may be effected only if, among other things:

- The issuer or the guarantor irrevocably deposits with the trustee cash or, in the case of debt securities payable only in U.S. dollars, U.S. government obligations, as trust funds in an amount certified to be sufficient to pay on each date that they become due and payable or a combination of the above sufficient to pay the principal of and interest on, and any mandatory sinking fund payments for, all outstanding debt securities of the series being defeased.
- The issuer or the guarantor delivers to the trustee an opinion of counsel to the effect that:
  - the beneficial owners of the series of debt securities being defeased will not recognize income, gain or loss for U.S. federal income tax purposes as a result of the defeasance or covenant defeasance; and
  - the defeasance or covenant defeasance will not otherwise alter those beneficial owners' U.S. federal income tax treatment of principal and interest payments on the series of debt securities being defeased.

In the case of a defeasance, but not in the case of covenant defeasance, this opinion must be based on a ruling of the Internal Revenue Service or a change in U.S. federal income tax law occurring after the date of this prospectus, since that result would not occur under current tax law.

Modification of the MSFL Senior Debt Indenture

Modifications Without Consent of Holders. The issuer, the guarantor and the trustee may enter into supplemental indentures without the consent of the holders of debt securities issued under a particular indenture to:

- secure any debt securities (and to secure the guarantee of any debt securities securities);
- evidence the assumption by a successor of the obligations of the issuer or the guarantor (including to evidence the merger of MSFL with and into Morgan Stanley and, in such case, to evidence the elimination of the guarantee);
- add covenants for the protection of the holders of debt securities;
- cure any ambiguity or correct any inconsistency;
- add to, change or eliminate any of the provisions of the indenture in respect of all or any securities of any series; provided that any such addition, change or elimination (i) shall neither (a) apply to any security issued prior to the execution of such supplemental indenture and entitled to the benefit of such provision nor (b) modify the rights of any holder of such security with respect to such provision or (ii) shall become effective only when there is no such security outstanding;
- establish the forms or terms of debt securities of any series; or
- evidence the acceptance of appointment by a successor trustee. (MSFL Senior Debt Indenture, Section 8.01).

Modifications with Consent of Holders. The issuer, the guarantor and the trustee, with the consent of the holders of not less than a majority in aggregate principal amount of each affected series of outstanding debt securities, voting as one class, may add any provisions to, or change in any manner or eliminate any of the provisions of, the applicable indenture or modify in any manner the rights of the holders of those debt securities. However, the issuer, the guarantor and the trustee may not make any of the following changes to any outstanding debt security without the consent of each holder that would be affected by such change:

- extend the final maturity of the principal;
- reduce the principal amount;
- reduce the rate or extend the time of payment of interest;
- reduce any amount payable on redemption;

- change the currency in which the principal and any amount of original issue discount, premium, or interest thereon is payable;
- modify or amend the provisions for conversion of any currency into another currency;
- reduce the amount of any original issue discount security payable upon acceleration or provable in bankruptcy;
- alter the terms on which holders of the debt securities may convert or exchange debt securities for stock or other securities of the issuer or of other entities or for other property or the cash value of the property, other than in accordance with the antidilution provisions or other similar adjustment provisions included in the terms of the debt securities;
- alter certain provisions of the indenture relating to debt securities not denominated in U.S. dollars;
- impair the right of any holder to institute suit for the enforcement of any payment on any debt security when due;
- remove the guarantee (except upon the merger of MSFL with and into Morgan Stanley); or
- reduce the percentage of debt securities the consent of whose holders is required for modification of the indenture (MSFL Senior Debt Indenture, Section 8.02).

Replacement of Debt Securities

At the expense of the holder, the issuer may, in its discretion, replace any debt securities that become mutilated, destroyed, lost or stolen or are apparently destroyed, lost or stolen. The mutilated debt securities must be delivered to the trustee, the paying agent and the registrar, in the case of registered debt securities, or satisfactory evidence of the destruction, loss or theft of the debt securities must be delivered to the issuer, the guarantor, the paying agent, the registrar, in the case of registered debt securities, and the trustee. At the expense of the holder, an indemnity that is satisfactory to the issuer, the guarantor, the principal paying agent, the registrar, in the case of registered debt securities, and the trustee may be required before a replacement debt security will be issued.

Concerning the Issuer's and the Guarantor's Relationship with the Trustee

Morgan Stanley, MSFL and other subsidiaries of Morgan Stanley and affiliates of MSFL maintain ordinary banking relationships and credit facilities with The Bank of New York Mellon, a New York banking corporation (including as successor to JPMorgan Chase Bank, N.A. and J.P. Morgan Trust Company, National Association).

Governing Law

The debt securities, Morgan Stanley's guarantee of debt securities issued by MSFL and the MSFL Senior Debt Indenture will be governed by, and construed in accordance with, the laws of the State of New York.

Global Medium-Term Notes, Series A, Floating Rate Notes Due 2029

MSFL issued the 2029 Notes in an aggregate principal amount of $15,001,000. The 2029 Notes were issued in minimum denominations of $1,000 and integral multiples of $1,000 in excess thereof. The 2029 Notes will mature on June 27, 2029. As of December 31, 2022, $15,001,000 in aggregate principal amount of the 2029 Notes was outstanding.

Listing

The 2029 Notes are traded on the New York Stock Exchange under the trading symbol "MS/29."

Interest Payments

The 2029 Notes bear interest at a variable rate per annum equal to the Base Rate plus the Spread, subject to the Minimum Interest Rate.

Base Rate. The Secured Overnight Financing Rate (compounded daily over a quarterly Interest Payment Period in accordance with the specific formula described under "-How Interest Is Calculated" below) ("compounded SOFR"). As further described below, (i) in determining the Base Rate for a U.S. government securities business day, the Base Rate generally will be the rate in respect of such day that is provided on the following U.S. government securities business day and (ii) in determining the Base Rate for any other day, such as a Saturday, Sunday or

holiday, the Base Rate generally will be the rate in respect of the immediately preceding U.S. government securities business day that is provided on the following U.S. government securities business day.

Index Maturity. Daily.

Spread. Plus 1.375% (to be added to the accrued interest compounding factor for an Interest Payment Period).

Minimum Interest Rate. 0.10% per annum.

Index Currency. U.S. Dollars.

Interest Payment Periods. Quarterly. With respect to an Interest Payment Date, the period from and including the second most recent Interest Payment Period End-Date (or from and including the original issue date in the case of the first Interest Payment Period) to but excluding the immediately preceding Interest Payment Period End-Date; provided that (i) the Interest Payment Period with respect to the final Interest Payment Date (i.e., the maturity date) will be the period from and including the second-to-last Interest Payment Period End-Date to but excluding the maturity date (the final Interest Payment Period End-Date) and (ii) with respect to such final Interest Payment Period, the level of SOFR for each calendar day in the period from and including the Rate Cut-Off Date to but excluding the maturity date shall be the level of SOFR in respect of such Rate Cut-Off Date.

Interest Payment Period End-Dates. Each March 27, June 27, September 27 and December 27, commencing September 2022 and ending on the maturity date; *provided* that if any scheduled Interest Payment Period End-Date, other than the maturity date, falls on a day that is not a business day, it will be postponed to the following business day. If the scheduled final Interest Payment Period End-Date for the notes (i.e., the maturity date) falls on a day that is not a business day, the payment of principal and interest will be made on the next succeeding business day, but interest on that payment will not accrue during the period from and after the scheduled final Interest Payment Period End-Date.

Interest Payment Dates. The second business day following each Interest Payment Period End-Date; provided that the Interest Payment Date with respect to the final Interest Payment Period will be the maturity date. If the scheduled maturity date falls on a day that is not a business day, the payment of principal and interest will be made on the next succeeding business day, but interest on that payment will not accrue during the period from and after the scheduled maturity date.

Rate Cut-Off Date. The second U.S. government securities business day prior to the maturity date.

How Interest Is Calculated. Accrued interest on the 2029 Notes will be calculated by multiplying the principal amount of the 2029 Notes by an accrued interest factor. This accrued interest factor will be computed by adding the interest factors calculated for each day in the Interest Payment Period for which interest is being paid. The interest factor for each day is computed by dividing the interest rate applicable to that day by 360. The interest rate applicable to a given day is the sum of the accrued interest compounding factor plus the Spread.

Notwithstanding the foregoing, in no event will the interest rate payable for any Interest Payment Period be less than the Minimum Interest Rate.

On each Interest Payment Date, accrued interest will be paid for the most recently completed Interest Payment Period. Interest on the 2029 Notes will accrue from and including the most recent Interest Payment Period End-Date to which interest has been paid or duly provided for, or if no interest has been paid or duly provided for, from and including the original issue date. Interest will accrue to but excluding the next Interest Payment Period End-Date.

The calculation agent will notify the paying agent of each determination of the interest rate applicable to the 2029 Notes promptly after the determination is made.

With respect to any Interest Payment Period, the accrued interest compounding factor means the rate of return of a daily compound interest investment computed in accordance with the following formula (with the resulting percentage rounded, if necessary, to the nearest one hundred-thousandth of a percentage point, with 0.000005 being rounded upwards to 0.00001):

$$\left[\prod_{i=1}^{do}\left(1+\frac{SOFRi \; x \; ni}{360}\right)-1\right] x \, \frac{360}{d}$$

"d_0", for any Interest Payment Period, is the number of U.S. Government Securities Business Days in the relevant Interest Payment Period.

"i" is a series of whole numbers from one to d_0, each representing the relevant U.S. Government Securities Business Days in chronological order from, and including, the first U.S. Government Securities Business Day in the relevant Interest Payment Period.

"$SOFR_i$", for any day "i" in the relevant Interest Payment Period, is a reference rate equal to SOFR in respect of that day.

"n_i" is the number of calendar days in the relevant Interest Payment Period on which the rate is $SOFR_i$.

"d" is the number of calendar days in the relevant Interest Payment Period.

For these calculations, the interest rate in effect on any U.S. Government Securities Business Day will be the applicable rate as reset on that date. The interest rate applicable to any other day is the interest rate from the immediately preceding U.S. Government Securities Business Day.

Acceleration Amount in Case of an Event of Default. In case an event of default with respect to the 2029 Notes shall have occurred and be continuing, the amount declared due and payable per note upon any acceleration of the 2029 Notes shall be determined by the calculation agent, after consultation with the issuer, and shall be an amount in cash equal to the Stated Principal Amount plus accrued and unpaid interest calculated as if the date of such acceleration were the maturity date, final Interest Payment Period End-Date (if applicable) and final Interest Payment Date.

Determination of SOFR

The 2029 Notes will bear interest at the interest rate specified above. That interest rate will be based on SOFR with the Index Maturity specified above.

"SOFR" means, with respect to any U.S. Government Securities Business Day:

(1) the Secured Overnight Financing Rate in respect of such U.S. Government Securities Business Day as provided by the New York Federal Reserve, as the administrator of such rate (or a successor administrator) on the New York Federal Reserve's Website on or about 5:00 p.m. (New York time) on the U.S. Government Securities Business Day immediately following such U.S. Government Securities Business Day; or

(2) if the Secured Overnight Financing Rate in respect of such U.S. Government Securities Business Day does not appear as specified in paragraph (1), unless both a Benchmark Transition Event and its related Benchmark Replacement Date have occurred, the Secured Overnight Financing Rate in respect of the last U.S. Government Securities Business Day for which such rate was published on the New York Federal Reserve's Website; or

(3) if a Benchmark Transition Event and its related Benchmark Replacement Date have occurred:

- the sum of: (a) the alternate rate of interest that has been selected or recommended by the Relevant Governmental Body as the replacement for the then-current Benchmark for the applicable Corresponding Tenor and (b) the Benchmark Replacement Adjustment; or

- the sum of: (a) the ISDA Fallback Rate and (b) the Benchmark Replacement Adjustment; or

- the sum of: (a) the alternate rate of interest that has been selected by the issuer or its designee as the replacement for the then-current Benchmark for the applicable Corresponding Tenor giving due consideration to any industry-accepted rate of interest as a replacement for the then-current Benchmark for U.S. dollar-denominated floating rate notes at such time and (b) the Benchmark Replacement Adjustment.

"Benchmark" means the Secured Overnight Financing Rate with the Index Maturity specified above; *provided* that if a Benchmark Transition Event and its related Benchmark Replacement Date have occurred with respect to the Secured Overnight Financing Rate with the Index Maturity specified above or the then-current Benchmark, then "Benchmark" means the applicable Benchmark Replacement.

"Benchmark Replacement" means the first alternative set forth in the order presented in clause (3) of the definition of "SOFR" that can be determined by the issuer or its designee as of the Benchmark Replacement Date. In connection with the implementation of a Benchmark Replacement, the issuer or its designee will have the right to make Benchmark Replacement Conforming Changes from time to time.

"Benchmark Replacement Adjustment" means the first alternative set forth in the order below that can be determined by the issuer or its designee as of the Benchmark Replacement Date:

(1) the spread adjustment, or method for calculating or determining such spread adjustment, (which may be a positive or negative value or zero) that has been selected or recommended by the Relevant Governmental Body for the applicable Unadjusted Benchmark Replacement;

(2) if the applicable Unadjusted Benchmark Replacement is equivalent to the ISDA Fallback Rate, then the ISDA Fallback Adjustment;

(3) the spread adjustment (which may be a positive or negative value or zero) that has been selected by the issuer or its designee giving due consideration to any industry-accepted spread adjustment, or method for calculating or determining such spread adjustment, for the replacement of the then-current Benchmark with the applicable Unadjusted Benchmark Replacement for U.S. dollar-denominated floating rate notes at such time.

"Benchmark Replacement Conforming Changes" means, with respect to any Benchmark Replacement, any technical, administrative or operational changes (including changes to the definition of "Interest Payment Period," timing and frequency of determining rates and making payments of interest and other administrative matters) that the issuer or its designee decides may be appropriate to reflect the adoption of such Benchmark Replacement in a manner substantially consistent with market practice (or, if the issuer or its designee decides that adoption of any portion of such market practice is not administratively feasible or if the issuer or its designee determines that no market practice for use of the Benchmark Replacement exists, in such other manner as the issuer or its designee determines is reasonably necessary).

"Benchmark Replacement Date" means the earliest to occur of the following events with respect to the then-current Benchmark:

(1) in the case of clause (1) or (2) of the definition of "Benchmark Transition Event," the later of (a) the date of the public statement or publication of information referenced therein and (b) the date on which the administrator of the Benchmark permanently or indefinitely ceases to provide the Benchmark; or

(2) in the case of clause (3) of the definition of "Benchmark Transition Event," the date of the public statement or publication of information referenced therein.

For the avoidance of doubt, if the event giving rise to the Benchmark Replacement Date occurs on the same day as, but earlier than, the Reference Time in respect of any determination, the Benchmark Replacement Date will be deemed to have occurred prior to the Reference Time for such determination.

"Benchmark Transition Event" means the occurrence of one or more of the following events with respect to the then-current Benchmark:

(1) a public statement or publication of information by or on behalf of the administrator of the Benchmark announcing that such administrator has ceased or will cease to provide the Benchmark, permanently or indefinitely, *provided* that, at the time of such statement or publication, there is no successor administrator that will continue to provide the Benchmark;

(2) a public statement or publication of information by the regulatory supervisor for the administrator of the Benchmark, the central bank for the currency of the Benchmark, an insolvency official with jurisdiction over the administrator for the Benchmark, a resolution authority with jurisdiction over the administrator for the Benchmark or a court or an entity with similar insolvency or resolution authority over the administrator for the Benchmark, which states that the administrator of the Benchmark has ceased or will cease to provide the Benchmark permanently or indefinitely, *provided* that, at the time of such statement or publication, there is no successor administrator that will continue to provide the Benchmark; or

(3) a public statement or publication of information by the regulatory supervisor for the administrator of the Benchmark announcing that the Benchmark is no longer representative.

A "business day" means any day, other than a Saturday or Sunday, that is neither a legal holiday nor a day on which banking institutions are authorized or required by law or regulation to close in The City of New York.

"Corresponding Tenor" with respect to a Benchmark Replacement means a tenor (including overnight) having approximately the same length (disregarding business day adjustment) as the applicable tenor for the then-current Benchmark.

"ISDA Definitions" means the 2006 ISDA Definitions published by the International Swaps and Derivatives Association, Inc. or any successor thereto, as amended or supplemented from time to time, or any successor definitional booklet for interest rate derivatives published from time to time.

"ISDA Fallback Adjustment" means the spread adjustment (which may be a positive or negative value or zero) that would apply for derivatives transactions referencing the ISDA Definitions to be determined upon the occurrence of an index cessation event with respect to the Benchmark for the applicable tenor.

"ISDA Fallback Rate" means the rate that would apply for derivatives transactions referencing the ISDA Definitions to be effective upon the occurrence of an index cessation date with respect to the Benchmark for the applicable tenor excluding the applicable ISDA Fallback Adjustment.

"New York Federal Reserve" means the Federal Reserve Bank of New York.

"New York Federal Reserve's Website" means the website of the New York Federal Reserve, currently at http://www.newyorkfed.org, or any successor source.

"Reference Time" with respect to any determination of the Benchmark means the time determined by the issuer or its designee in accordance with the Benchmark Replacement Conforming Changes.

"Relevant Governmental Body" means the Federal Reserve Board and/or the Federal Reserve Bank of New York, or a committee officially endorsed or convened by the Federal Reserve Board and/or the Federal Reserve Bank of New York or any successor thereto.

"U.S. Government Securities Business Day" means any day except for a Saturday, Sunday or a day on which the Securities Industry and Financial Markets Association recommends that the fixed income departments of its members be closed for the entire day for purposes of trading in U.S. government securities.

"Unadjusted Benchmark Replacement" means the Benchmark Replacement excluding the Benchmark Replacement Adjustment.

If a Benchmark Transition Event and its related Benchmark Replacement Date have occurred, any determination, decision or election that may be made by the issuer or its designee pursuant to this section "Determination of SOFR," including any determination with respect to a tenor, rate or adjustment or of the occurrence or non-occurrence of an event, circumstance or date and any decision to take or refrain from taking any action or any selection:

- will be conclusive and binding absent manifest error;
- will be made in the issuer's or its designee's sole discretion; and
- notwithstanding anything to the contrary in the documentation relating to the 2029 Notes, shall become effective without consent from the holders of the 2029 Notes or any other party.

General Terms of the 2029 Notes

In the below sections, all references to "debt securities" refer to Series A medium-term notes issued by MSFL under the MSFL Senior Debt Indenture. The following description of the terms of the debt securities contains certain general terms that may apply to the debt securities, including the 2029 Notes.

MSFL has summarized below the material provisions of the MSFL Senior Debt Indenture and the debt securities, including the guarantee of Morgan Stanley. These descriptions are only summaries, and each investor should refer to the MSFL Senior Debt Indenture and any applicable supplements thereto, which describe completely the terms and definitions summarized below and contain additional information regarding the debt securities. Where appropriate, MSFL uses parentheses to refer you to the particular sections of the MSFL Senior Debt Indenture. Any reference to particular sections or defined terms of the MSFL Senior Debt Indenture in any statement qualifies the entire statement and incorporates by reference the applicable section or definition into that statement.

Morgan Stanley Guarantee of Debt Securities Issued by MSFL

The payments due, including any property deliverable under any debt securities issued by MSFL, will be fully and unconditionally guaranteed by Morgan Stanley. If, for any reason, MSFL does not make any required payment

in respect of any debt security issued by it when due, Morgan Stanley will cause the payment to be made at the same address at which MSFL is obligated to make such payment. MSFL has no independent operations beyond the issuance and administration of its securities and will have no independent assets available for distributions to holders of MSFL securities if they make claims in respect of the securities in a bankruptcy, resolution or similar proceeding. Accordingly, holders will have recourse only to a single claim against Morgan Stanley and its assets under the guarantee. Morgan Stanley's guarantees of the payments due on debt securities issued by MSFL will be unsecured senior obligations of Morgan Stanley. In addition, if MSFL were to merge with and into Morgan Stanley pursuant to the terms of the MSFL Senior Debt Indenture, the guarantee will terminate.

Indenture

The 2029 Notes are issued under the MSFL Senior Debt Indenture.

Covenants Restricting Pledges, Mergers and Other Significant Corporate Actions

Negative Pledge of Morgan Stanley. Because Morgan Stanley is a holding company, its assets consist primarily of the securities of its subsidiaries. The negative pledge provisions of the MSFL Senior Debt Indenture limit Morgan Stanley's ability to pledge some of these securities. The MSFL Senior Debt Indenture provides that Morgan Stanley will not, and will not permit any subsidiary to, create, assume, incur or guarantee any indebtedness for borrowed money that is secured by a pledge, lien or other encumbrance except for liens specifically permitted by such senior indenture on:

◦ the voting securities of Morgan Stanley & Co. LLC, Morgan Stanley & Co. International plc, Morgan Stanley Smith Barney LLC or any subsidiary succeeding to any substantial part of the business now conducted by any of those corporations, which are referred to collectively as the "principal subsidiaries," or

◦ the voting securities of a subsidiary that owns, directly or indirectly, the voting securities of any of the principal subsidiaries, other than directors' qualifying shares,

without making effective provisions so that the guarantee issued under the MSFL Senior Debt Indenture will be secured equally and ratably with indebtedness so secured.

For these purposes, "subsidiary" means any corporation, partnership or other entity of which at the time of determination Morgan Stanley owns or controls directly or indirectly more than 50% of the shares of the voting stock or equivalent interest, and "voting securities" means stock of any class or classes having general voting power under ordinary circumstances to elect a majority of the board of directors, managers or trustees of the relevant subsidiary, other than stock that carries only the conditional right to vote upon the happening of an event, whether or not that event has happened. (MSFL Senior Debt Indenture, Section 13.10).

Merger or Consolidation of MSFL, as Issuer, or Morgan Stanley, as Guarantor, Under the MSFL Senior Debt Indenture. The MSFL Senior Debt Indenture provides that neither MSFL, as issuer, nor Morgan Stanley, as guarantor, will merge or consolidate with any other person, unless:

◦ MSFL or Morgan Stanley, as applicable, will be the continuing person; or

◦ the successor person by merger or consolidation to MSFL or Morgan Stanley, as applicable:

  ▪ will be a person organized under the laws of the United States, a state of the United States or the District of Columbia; and

  ▪ will expressly assume all of MSFL's or Morgan Stanley's obligations, as applicable, under the indenture and the debt securities or the guarantees, as applicable, issued under the indenture; and

◦ immediately after the merger or consolidation, MSFL, Morgan Stanley or that successor person, as the case may be, in its capacity as issuer or guarantor, as applicable, will not be in default in the performance of the covenants and conditions of the indenture applicable to it. (MSFL Senior Debt Indenture, Sections 9.01 and 13.11).

For the avoidance of doubt, the successor person referred to in this section may be Morgan Stanley or any subsidiary of Morgan Stanley.

Sale, Lease or Conveyance by MSFL, as Issuer, or Morgan Stanley, as Guarantor, Under the MSFL Senior Debt Indenture. The MSFL Senior Debt Indenture provides that neither MSFL, as issuer, nor Morgan Stanley, as guarantor, will sell, lease or convey all or substantially all of its assets to any other person (other than the sale, lease or conveyance of all or substantially all of Morgan Stanley's assets to one or more of Morgan Stanley's subsidiaries), unless:

- the person that acquires all or substantially all of the assets of MSFL or of Morgan Stanley, as applicable:
  - will be a person organized under the laws of the United States, a state of the United States or the District of Columbia; and
  - will expressly assume all of MSFL's or Morgan Stanley's obligations, as applicable, under the indenture and the debt securities or the guarantees, as applicable, issued under the indenture; and
- immediately after the sale, lease or conveyance, that acquiring person, in its capacity as issuer or guarantor, as applicable, will not be in default in the performance of the covenants and conditions of the indenture applicable to it. (MSFL Senior Debt Indenture, Sections 9.01 and 13.11).

For the avoidance of doubt, the acquiring person referred to in this section may be Morgan Stanley or any subsidiary of Morgan Stanley.

For the avoidance of doubt, the sale, lease or conveyance of all or substantially all of MSFL's or Morgan Stanley's assets to one or more of Morgan Stanley's subsidiaries is not subject to any restrictions under the MSFL Senior Debt Indenture.

Absence of Protections against All Potential Actions of the Issuer and the Guarantor. There are no covenants or other provisions in the MSFL Senior Debt Indenture that would afford holders of debt securities additional protection in the event of a recapitalization transaction, a change of control of the issuer or the guarantor, as applicable, or a highly leveraged transaction. The merger covenants described above would only apply if the recapitalization transaction, change of control or highly leveraged transaction were structured to include a merger or consolidation of the issuer or the guarantor, as applicable, or a sale, lease or conveyance of all or substantially all of the assets of the issuer or the guarantor, as applicable.

Events of Default

The MSFL Senior Debt Indenture provides holders of debt securities with remedies if MSFL, as issuer, fails to perform specific obligations or if MSFL becomes bankrupt. The MSFL Senior Debt Indenture permits the issuance of debt securities in one or more series, and, in many cases, whether an event of default has occurred is determined on a series by series basis.

An event of default is defined under the MSFL Senior Debt Indenture, with respect to any series of debt securities issued by MSFL under that indenture, as being:

- default for 30 days in payment of any principal of the debt securities of that series, either at maturity or upon any redemption, by declaration or otherwise;
- default for 30 days in payment of any interest on any debt securities of that series;
- events of bankruptcy, insolvency or reorganization of MSFL; or
- any other event of default provided in the supplemental indenture under which that series of debt securities is issued. (MSFL Senior Debt Indenture, Section 5.01).

The 2029 Notes do not have the benefit of any cross-default or cross-acceleration provisions with other indebtedness of MSFL or Morgan Stanley.

In the case of a default in payment of any principal or any interest with respect to the debt securities issued under the MSFL Senior Debt Indenture, there will only be an event of default, and therefore a right of acceleration, if such default continues for a period of 30 days. In addition, under the MSFL Senior Debt Indenture, a covenant default by Morgan Stanley, as guarantor, or an event of bankruptcy, insolvency or reorganization of Morgan Stanley, as guarantor, does not constitute an event of default.

Acceleration of Debt Securities upon an Event of Default. The MSFL Senior Debt Indenture provides that:

- if an event of default due to the default in payment of principal of, or any premium or interest on, any series of debt securities issued under that indenture occurs and is continuing, either the trustee or the holders of not less than 25% in aggregate principal amount of the outstanding debt securities of each affected series, voting as one class, by notice in writing to the issuer and to the trustee, if given by security holders, may declare the principal of all debt securities of all affected series and interest accrued thereon to be due and payable immediately; and

- if an event of default due to specified events of bankruptcy, insolvency or reorganization of the issuer, occurs and is continuing, either the trustee or the holders of not less than 25% in aggregate principal amount of all outstanding debt securities issued under that indenture, voting as one class, by notice in writing to the issuer and to the trustee, if given by security holders, may declare the principal of all those debt securities and interest accrued thereon to be due and payable immediately. (MSFL Senior Debt Indenture, Section 5.01).

There will be no event of default, and therefore no right of acceleration, in the case of a default in the performance of any covenant or obligation with respect to the debt securities issued under the MSFL Senior Debt Indenture (other than a covenant or warranty which is specifically dealt with above). If any such default occurs and is continuing, the trustee may pursue legal action to enforce the performance of any provision in the indenture to protect the rights of the trustee and the holders of the debt securities issued under such indenture. (MSFL Senior Debt Indenture, Section 5.04).

Annulment of Acceleration and Waiver of Defaults. The MSFL Senior Debt Indenture provides that:

In some circumstances, if any and all events of default under that indenture, other than the non-payment of the principal of the securities that has become due as a result of an acceleration, have been cured, waived or otherwise remedied, then the holders of a majority in aggregate principal amount of all series of outstanding debt securities affected, voting as one class, may waive past defaults and rescind and annul past declarations of acceleration of the debt securities. (MSFL Senior Debt Indenture, Section 5.01).

Prior to the acceleration of any debt securities, the holders of a majority in aggregate principal amount of all series of outstanding debt securities with respect to which an event of default or a covenant breach has occurred and is continuing, voting as one class, may waive any past default or event of default or any past covenant breach, other than a default in the payment of principal or interest (unless such default has been cured and an amount sufficient to pay all matured installments of interest and principal due otherwise than by acceleration has been deposited with the trustee) or a default in respect of a covenant or provision in that indenture that cannot be modified or amended without the consent of the holder of each debt security affected. (MSFL Senior Debt Indenture, Section 5.10).

Indemnification of Trustee for Actions Taken on Your Behalf. The MSFL Senior Debt Indenture contains a provision entitling the trustee, subject to the duty of the trustee during a default to act with the required standard of care, to be indemnified by the holders of debt securities issued under that indenture before proceeding to exercise any trust or power at the request of holders. (MSFL Senior Debt Indenture, Section 6.02). Subject to these provisions and some other limitations, the holders of a majority in aggregate principal amount of each series of outstanding debt securities of each affected series, voting as one class, may direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or exercising any trust or power conferred on the trustee. (MSFL Senior Debt Indenture, Section 5.09).

Limitation on Actions by You as an Individual Holder. The MSFL Senior Debt Indenture provides that no individual holder of debt securities may institute any action against the issuer or the guarantor under that indenture, except actions for payment of overdue principal and interest, unless the following actions have occurred:

- the holder must have previously given written notice to the trustee of the continuing default;
- the holders of not less than 25% in aggregate principal amount of the outstanding debt securities of each affected series, treated as one class, must have (1) requested the trustee to institute that action and (2) offered the trustee reasonable indemnity;
- the trustee must have failed to institute that action within 60 days after receipt of the request referred to above; and
- the holders of a majority in principal amount of the outstanding debt securities of each affected series, voting as one class, must not have given directions to the trustee inconsistent with those of the holders referred to above. (MSFL Senior Debt Indenture, Sections 5.06 and 5.09).

Annual Certification. The MSFL Senior Debt Indenture contains a covenant that the issuer will file annually with the trustee a certificate of no default or a certificate specifying any default that exists. (MSFL Senior Debt Indenture, Section 3.05).

Discharge, Defeasance and Covenant Defeasance

The issuer or the guarantor has the ability to eliminate most or all of the obligations of the issuer and the guarantor on any series of debt securities prior to maturity if the issuer or the guarantor complies with the following provisions. (MSFL Senior Debt Indenture, Section 10.01).

Discharge of Indenture. If at any time the issuer has:

- paid or caused to be paid the principal of and interest on all of the outstanding debt securities in accordance with their terms (or the guarantor has done the same);
- delivered to the trustee for cancellation all of the outstanding debt securities; or
- irrevocably deposited with the trustee cash or, in the case of a series of debt securities payable only in U.S. dollars, U.S. government obligations in trust for the benefit of the holders of any series of debt securities issued under that indenture that have either become due and payable, or are by their terms due and payable within one year or are scheduled for redemption within one year, in an amount certified to be sufficient to pay on each date that they become due and payable, the principal of and interest on, and any mandatory sinking fund payments for, those debt securities (or the guarantor has done the same);

and if, in any such case, the issuer or the guarantor also pays or causes to be paid all other sums payable by the issuer or the guarantor under the indenture with respect to the securities of such series, then that indenture shall cease to be of further effect with respect to the securities of such series, except as to certain rights and with respect to the transfer and exchange of securities, rights of the holders to receive payment and certain other rights and except that the deposit of cash or U.S. government obligations for the benefit of holders of a series of debt securities that are due and payable or are due and payable within one year or are scheduled for redemption within one year will discharge obligations under the indenture relating only to that series of debt securities.

Defeasance of a Series of Securities at Any Time. The issuer or the guarantor may also discharge all obligations of the issuer and the guarantor, other than as to transfers and exchanges, under any series of debt securities at any time, which is referred to as "defeasance."

The issuer and the guarantor, may be released with respect to any outstanding series of debt securities from the obligations imposed by Section 13.10 and Section 13.11 and Section 9.01, which sections contain the covenants described above limiting liens and consolidations, mergers, asset sales and leases, and elect not to comply with those sections without creating an event of default, covenant breach or a default. Discharge under those procedures is called "covenant defeasance."

Defeasance or covenant defeasance may be effected only if, among other things:

- The issuer or the guarantor irrevocably deposits with the trustee cash or, in the case of debt securities payable only in U.S. dollars, U.S. government obligations, as trust funds in an amount certified to be sufficient to pay on each date that they become due and payable or a combination of the above sufficient to pay the principal of and interest on, and any mandatory sinking fund payments for, all outstanding debt securities of the series being defeased.
- The issuer or the guarantor delivers to the trustee an opinion of counsel to the effect that:
  - the beneficial owners of the series of debt securities being defeased will not recognize income, gain or loss for U.S. federal income tax purposes as a result of the defeasance or covenant defeasance; and
  - the defeasance or covenant defeasance will not otherwise alter those beneficial owners' U.S. federal income tax treatment of principal and interest payments on the series of debt securities being defeased.

In the case of a defeasance, but not in the case of covenant defeasance, this opinion must be based on a ruling of the Internal Revenue Service or a change in U.S. federal income tax law occurring after the date of this prospectus, since that result would not occur under current tax law.

Modification of the MSFL Senior Debt Indenture

Modifications Without Consent of Holders. The issuer, the guarantor and the trustee may enter into supplemental indentures without the consent of the holders of debt securities issued under a particular indenture to:

- secure any debt securities (and to secure the guarantee of any debt securities securities);
- evidence the assumption by a successor of the obligations of the issuer or the guarantor (including to evidence the merger of MSFL with and into Morgan Stanley and, in such case, to evidence the elimination of the guarantee);
- add covenants for the protection of the holders of debt securities;
- cure any ambiguity or correct any inconsistency;

- add to, change or eliminate any of the provisions of the indenture in respect of all or any securities of any series; provided that any such addition, change or elimination (i) shall neither (a) apply to any security issued prior to the execution of such supplemental indenture and entitled to the benefit of such provision nor (b) modify the rights of any holder of such security with respect to such provision or (ii) shall become effective only when there is no such security outstanding;

- establish the forms or terms of debt securities of any series; or

- evidence the acceptance of appointment by a successor trustee. (MSFL Senior Debt Indenture, Section 8.01).

Modifications with Consent of Holders. The issuer, the guarantor and the trustee, with the consent of the holders of not less than a majority in aggregate principal amount of each affected series of outstanding debt securities, voting as one class, may add any provisions to, or change in any manner or eliminate any of the provisions of, the applicable indenture or modify in any manner the rights of the holders of those debt securities. However, the issuer, the guarantor and the trustee may not make any of the following changes to any outstanding debt security without the consent of each holder that would be affected by such change:

- extend the final maturity of the principal;

- reduce the principal amount;

- reduce the rate or extend the time of payment of interest;

- reduce any amount payable on redemption;

- change the currency in which the principal and any amount of original issue discount, premium, or interest thereon is payable;

- modify or amend the provisions for conversion of any currency into another currency;

- reduce the amount of any original issue discount security payable upon acceleration or provable in bankruptcy;

- alter the terms on which holders of the debt securities may convert or exchange debt securities for stock or other securities of the issuer or of other entities or for other property or the cash value of the property, other than in accordance with the antidilution provisions or other similar adjustment provisions included in the terms of the debt securities;

- alter certain provisions of the indenture relating to debt securities not denominated in U.S. dollars;

- impair the right of any holder to institute suit for the enforcement of any payment on any debt security when due;

- remove the guarantee (except upon the merger of MSFL with and into Morgan Stanley); or

- reduce the percentage of debt securities the consent of whose holders is required for modification of the indenture (MSFL Senior Debt Indenture, Section 8.02).

Replacement of Debt Securities

At the expense of the holder, the issuer may, in its discretion, replace any debt securities that become mutilated, destroyed, lost or stolen or are apparently destroyed, lost or stolen. The mutilated debt securities must be delivered to the trustee, the paying agent and the registrar, in the case of registered debt securities, or satisfactory evidence of the destruction, loss or theft of the debt securities must be delivered to the issuer, the guarantor, the paying agent, the registrar, in the case of registered debt securities, and the trustee. At the expense of the holder, an indemnity that is satisfactory to the issuer, the guarantor, the principal paying agent, the registrar, in the case of registered debt securities, and the trustee may be required before a replacement debt security will be issued.

Concerning the Issuer’s and the Guarantor’s Relationship with the Trustee

Morgan Stanley, MSFL and other subsidiaries of Morgan Stanley and affiliates of MSFL maintain ordinary banking relationships and credit facilities with The Bank of New York Mellon, a New York banking corporation (including as successor to JPMorgan Chase Bank, N.A. and J.P. Morgan Trust Company, National Association).

Governing Law

The debt securities, Morgan Stanley's guarantee of debt securities issued by MSFL and the MSFL Senior Debt Indenture will be governed by, and construed in accordance with, the laws of the State of New York.

EXHIBIT 10.4

**AMENDMENT
TO THE
MORGAN STANLEY 401(k) PLAN**

Morgan Stanley Services Group Inc. (the "Company"), pursuant to authority granted to it by Morgan Stanley Domestic Holdings, Inc., hereby amends the Morgan Stanley 401(k) Plan, effective as of January 1, 2023, unless otherwise stated, as follows:

1. Effective December 1, 2022, Section 2, Definitions, is amended by inserting the following after the third sentence in the definition of "Earnings."

   "Effective December 1, 2022, Earnings shall also include a one-time special amount paid in December of 2022 to certain non-exempt employees in connection with changes to the timing of payroll. Notwithstanding the foregoing sentence, all such payments shall be included as Earnings for purposes of determining Company Contributions under the Plan, but no such amounts paid before December 1, 2022 shall be included in any Elective Deferral election by the Participant."

2. Section 4(b)(i) of the Plan is amended to revise a drafting error by deleting the final sentence.

3. Section 5(a)(ii), After-Tax Contributions, of the Plan is amended by inserting the following immediately after the third sentence:

   "After-Tax Contributions. Notwithstanding the forgoing, effective as of January 1, 2023, a Participant who was a Highly Compensated Employee in the immediately prior Plan Year may make non-Roth After-Tax Contributions to the Plan for any prior year equal to any whole percentage, as determined on an annual basis by the Company, of such Participant's Earnings (for 2023, equal to any whole percentage from 1% to 9%) without regard to whether the Participant is making any Pre-Tax Contributions."

4. Section 5(k)(i) of the Plan is amended to add the following immediately after the second sentence:

   "Effective January 1, 2023, a Participant, spousal Beneficiary or alternate payee may elect automatic conversion of any amounts held in such individual's Account from non-Roth After-tax amounts to Roth After-tax amounts under the Plan."

5. Appendix B, Morgan Stanley Participating Companies is amended by inserting new entries at the end thereof as follows:

   "Cook Street Consulting, Inc. January 1, 2023"

6. Appendix B, Morgan Stanley Participating Companies is further amended by inserting the following at the end thereof:

   "Cook Street Consulting, Inc. Any individual who became an Eligible Employee in connection with the acquisition of Cook Street Consulting, Inc. ("CSCI") pursuant to the Share Purchase Agreement among the Shareholders of Cook Street Consulting, Inc. and Cook Street Consulting, Inc. and Morgan Stanley Domestic Holdings, Inc. dated December 31, 2021, and who was, immediately prior to becoming an Eligible Employee, an employee of CSCI, shall (i) become eligible to commence participation in the Plan effective January 1, 2023, and (ii) the term "Period of Service" shall include such individual's service with CSCI for purposes of determining the vested percentage of such Eligible Employee's Plan Benefit pursuant to Section 10 of the Plan. An Hour of Service as defined in Section 4(b) of the Plan shall include each hour for which a former

employee of CSCI was paid, or entitled to payment, for the performance of services for CSCI.

The Cook Street Consulting, Inc. 401(k) Plan (the "CSCI Plan") shall be merged with and into the Plan effective at the end of December 31, 2022. The contributions, benefits and other rights of Participants in the CSCI Plan with respect to the period prior to such merger are determined under the terms of the CSCI Plan as in effect prior to its merger with the Plan. Any person who was covered under the CSCI Plan prior to its merger with the Plan and who was entitled to benefits under the provisions of the CSCI Plan as in effect immediately prior to its merger with the Plan shall continue to be entitled to the same amount of accrued benefits without change under the Plan, and such benefits under the provisions of the CSCI Plan shall vest in accordance with the provisions of the CSCI Plan in effect immediately prior to such merger or, if sooner, in accordance with the provisions of this Plan; provided, however, that effective on December 31, 2022, for benefits with annuity starting dates beginning on or after December 31, 2022, the forms of distribution (including for these purposes, the time, manner and medium of distribution) available with respect to such accrued benefits shall be the forms of distribution available under the otherwise applicable provisions of the Plan (plus any other forms of distribution that were available under the CSCI Plan immediately prior to December 31, 2022 and that may not be eliminated under Code section 411(d)(6)).

In connection with the merger of the plans, any unvested employer contributions to participants under the CSCI Plan, including contributions made to the Morgan Stanley 401(k) Plan in 2023 but relating to the 2022 Plan Year, shall vest immediately without any regard to contrary provisions of the CSCI Plan."

American Financial Systems, LLC. Any individual who became an Eligible Employee in connection with the acquisition of American Financial Systems, Inc. ("AFS") pursuant to the Share Purchase Agreement among Weston Venture Partners Inc., Daniel Johnson, Megan Roschen, Sumit Nag and James F McCarthy, Jr, and American Financial Systems, Inc. and Morgan Stanley Domestic Holdings, Inc. dated June 9, 2022 and who was, immediately prior to becoming an Eligible Employee, an employee of AFS, shall (i) become eligible to commence participation in the Plan effective January 1, 2023, and (ii) the term "Period of Service" shall include such individual's service with AFS for purposes of determining the vested percentage of such Eligible Employee's Plan Benefit pursuant to Section 10 of the Plan. An Hour of Service as defined in Section 4(b) of the Plan shall include each hour for which a former employee of AFS was paid, or entitled to payment, for the performance of services for AFS.

The AFS 401K Plan shall be merged with and into the Plan effective at the end of December 31, 2022. The contributions, benefits and other rights of Participants in the AFS 401K Plan with respect to the period prior to such merger are determined under the terms of the AFS 401K Plan as in effect prior to its merger with the Plan. Any person who was covered under the AFS 401K Plan prior to its merger with the Plan and who was entitled to benefits under the provisions of the AFS 401K Plan as in effect immediately prior to its merger with the Plan shall continue to be entitled to the same amount of accrued benefits without change under the Plan, and such benefits under the provisions of the AFS 401K Plan shall vest in accordance with the provisions of the AFS 401K Plan in effect immediately prior to such merger or, if sooner, in accordance with the provisions of this Plan; provided, however, that effective on December 31, 2022, for benefits with annuity starting dates beginning on or after December 31, 2022, the forms of distribution (including for these purposes, the time, manner and medium of distribution) available with respect to such accrued benefits shall be the forms of distribution available under the otherwise applicable provisions of the Plan (plus any other forms of distribution that were available under the AFS 401K Plan immediately prior to December 31, 2022 and that may not be eliminated under Code section 411(d)(6)).

In connection with the merger of the plans, any unvested employer contributions to participants under the AFS Plan, including contributions made in 2023 to the Morgan Stanley 401(k) Plan but relating to the 2022 Plan Year, shall vest immediately without any regard to contrary provisions of the AFS Plan.

Blooom, Inc. Any individual who became an Eligible Employee in connection with the acquisition of assets of Blooom, Inc. pursuant to the Asset Purchase Agreement between Blooom, Inc. and Morgan Stanley Smith Barney LLC dated November 17, 2022 and who was, immediately prior to becoming an Eligible Employee, an employee of Blooom, Inc., shall (i) become eligible to commence participation in the Plan effective November 18, 2022, and (ii) the term "Period of Service" shall include such individual's service with Blooom, Inc. for purposes of determining the vested percentage of such Eligible Employee's Plan Benefit pursuant to Section 10 of the Plan. An Hour of Service as defined in Section 4(b) of the Plan shall include each hour for which a former employee of Blooom, Inc. was paid, or entitled to payment, for the performance of services for Blooom, Inc."

* * * * * * * * *

IN WITNESS WHEREOF, the Company has caused this Amendment to be executed on its behalf as of this 13th day of December, 2022.

MORGAN STANLEY SERVICES GROUP INC.

By: Mandell Crawley____________

Title: Chief Human Resources Officer

EXHIBIT 10.6

MORGAN STANLEY
DIRECTORS' EQUITY CAPITAL ACCUMULATION PLAN
(as amended and restated November 1, 2022)

Section 1. Purpose

Morgan Stanley, a Delaware corporation (the "*Company*"), hereby adopts the Morgan Stanley Directors' Equity Capital Accumulation Plan (the "*Plan*"). The purpose of the Plan is to promote the long-term growth and financial success of the Company by attracting, motivating and retaining non-employee directors of outstanding ability and assisting the Company in promoting a greater identity of interest between the Company's non-employee directors and its stockholders.

Capitalized terms used herein without definition have the meanings ascribed thereto in Section 24.

Section 2. Eligibility and Limitation on Director Compensation

Only directors of the Company who are not employees of the Company or any affiliate of the Company (the "*Eligible Directors*") shall participate in the Plan.

Notwithstanding anything in this Plan to the contrary, the aggregate dollar value of Awards granted and Retainers paid to any individual Eligible Director for any Annual Service Period shall not exceed seven hundred and fifty thousand dollars ($750,000). The value of any Awards shall be determined based on the Fair Market Value of a share of Stock on the grant date.

Section 3. Plan Operation

(a) Administration. Other than as provided in Section 5(c)(v), the Plan requires no discretionary action by any administrative body with regard to any transaction under the Plan. To the extent, if any, that questions of administration arise, these shall be resolved by the Board. The Board may, in its discretion, delegate to the Chief Financial Officer, the Chief Legal Officer, the Secretary of the Company or to one or more officers of the Company any or all authority and responsibility to act pursuant to the Plan. All references to the "Plan Administrators" in the Plan shall refer to the Board, or the Chief Financial Officer, the Chief Legal Officer, the Secretary or to one or more officers of the Company if the Board has delegated its authority pursuant to this Section 3(a). The determination of the Plan Administrators on all matters within their authority relating to the Plan shall be conclusive.

(b) No Liability. The Plan Administrators shall not be liable for any action or determination made in good faith with respect to the Plan or any award hereunder, and the Company shall indemnify and hold harmless the Plan Administrators from all losses and expenses (including reasonable attorneys' fees) arising from the assertion or judicial determination of any such liability.

Section 4. Shares of Stock Subject to the Plan

(a) Stock. Awards under the Plan shall relate to shares of Stock.

(b) Shares Available for Awards. Subject to Section 4(c) (relating to adjustments upon changes in capitalization), as of any date, the total number of shares of Stock with respect to which awards may be granted under the Plan shall be equal to the excess (if any) of (i) 3,450,000 shares over (ii) the sum of (A) the number of shares subject to outstanding awards granted under the Plan and (B) the number of shares previously issued pursuant to the Plan. In accordance with (and without limitation upon) the preceding sentence, shares of Stock covered by awards granted under the Plan that are canceled or expire unexercised shall again become available for awards under the Plan. Shares of Stock that shall be issuable pursuant to the awards granted under the Plan shall be authorized and unissued shares, treasury shares or shares of Stock purchased by, or on behalf of, the Company in open-market transactions.

(c) Adjustments. In the event of any merger, reorganization, recapitalization, consolidation, sale or other distribution of substantially all of the assets of the Company, any stock dividend, split, spin-off, split-up, split-off, distribution of cash, securities or other property by the Company, or other change in the Company's corporate structure affecting the Stock, then the following shall be automatically adjusted in order to prevent dilution or enlargement of the benefits or potential benefits intended to be awarded under the Plan:

(i) the aggregate number of shares of Stock reserved for issuance under the Plan;

(ii) the number of shares of Stock subject to outstanding awards;

(iii) the number of Stock Units credited pursuant to Section 6 and Section 9 of the Plan;

(iv) the per share purchase price of Stock subject to any stock options granted pursuant to the Plan; and

(v) the number of shares to be granted pursuant to any other automatic awards that may be provided for under the Plan in the future.

(d) Types of Award. The Company's stockholders originally approved the Plan on April 19, 1996, and have subsequently approved amendments to the Plan. The types of award authorized by the stockholders under the Plan are Director Stock, Stock Units, shares of Stock awarded at an Eligible Director's election pursuant to Section 11 and stock options.

Section 5. Stock Options

(a) Effective as of February 8, 2005 (the "*Stock Option Transition Date*"), no additional stock options will be awarded under the Plan.

(b) Section 5(a) shall not impair the rights of any person in any stock option that was awarded under the Plan prior to the Stock Option Transition Date. All such stock options shall remain subject to the terms and conditions applicable thereto.

(c) The following terms and conditions apply to stock options issued under the Plan, including without limitation all stock options issued prior to the Stock Option Transition Date:

(i) Nontransferability. No stock option granted pursuant to the Plan shall be sold, assigned or otherwise transferred by an Eligible Director other than by will or the laws of descent or distribution and any such stock option may be exercised during the Eligible Director's lifetime only by such Eligible Director.

(ii) Limitation on Exercise. No stock option granted pursuant to this Plan may be exercised for a period of six (6) months from the date such stock option was granted.

(iii) Effect of Termination.

(A) If an Eligible Director's service as a director of the Company terminates for a reason other than for Cause, then any stock option granted to such Eligible Director shall remain exercisable following the date of such Eligible Director's termination of service in accordance with the following provisions:

(a) Disability, Normal Retirement or Death. If service terminates by reason of Disability, Normal Retirement or death, until the expiration date of the stock option.

(b) Other. If service terminates for any other reason (except for Cause), until the earlier of 90 days after the termination date and the expiration date of the stock option.

(B) If an Eligible Director is terminated for Cause, all stock options granted under the Plan to such Eligible Director shall be canceled and shall no longer be exercisable, effective on the date of such Eligible Director's termination for Cause.

(iv) Expiration Date of Stock Options. All stock options granted under the Plan shall expire on the tenth anniversary of the date on which they are granted.

(v) Extension of Exercisability. Notwithstanding any other provision hereof, the Board shall have the authority, in its discretion, to amend any outstanding stock option granted pursuant to the Plan to extend the exercisability thereof; *provided*, *however*, that no such amendment shall cause such stock option to remain exercisable beyond its original expiration date.

(d) Notwithstanding Section 5(a), stock options remain one of the types of award that the stockholders of the Company have authorized for the Plan, and Section 5(a) shall not impair the authority of the Board under Section 15 to amend the Plan in the future to provide for awards of stock options without obtaining additional stockholder approval.

Section 6. Initial and Annual Awards

(a) Initial Awards. On the first day of the calendar month following the month in which any person becomes an Eligible Director, otherwise than by reason of being elected to the Board at an Annual Meeting, such Eligible Director shall be entitled to receive a number of Initial Stock Units obtained by dividing (x) $260,000 prorated for service during the period beginning on the first day of the calendar month during which such person becomes an Eligible Director until the last day of the calendar month immediately preceding the calendar month during which the first anniversary of the immediately preceding Annual Meeting will occur by (y) the Fair Market Value of a share of Stock on the first day of the calendar month

following the month in which such person becomes an Eligible Director; *provided*, *however*, that if such a person is elected, appointed or otherwise becomes an Eligible Director less than 60 days prior to the Annual Meeting in any year, then such Eligible Director shall not receive Initial Stock Units pursuant to this Section 6(a). 50% of the Initial Stock Units awarded to an Eligible Director pursuant to this Section 6(a) shall be credited to the Eligible Director's Career Stock Unit Account and the remaining 50% of the Initial Stock Units shall be credited to the Eligible Director's Current Stock Unit Account.

(b) Subsequent Awards. As of the first day of the calendar month following the calendar month in which each Annual Meeting occurs (each such date, an "*Annual Grant Date*"), each Eligible Director, including, without limitation, any Eligible Director who becomes a member of the Board by reason of being elected to the Board at such Annual Meeting, shall be entitled to receive a number of Annual Stock Units obtained by dividing $260,000 by the Fair Market Value of a share of Stock on the applicable Annual Grant Date; *provided*, that such Eligible Director shall continue to serve as a director of the Company after such Annual Meeting. 50% of the Annual Stock Units awarded to an Eligible Director pursuant to this Section 6(b) shall be credited to the Eligible Director's Career Stock Unit Account and the remaining 50% of the Annual Stock Units shall be credited to the Eligible Director's Current Stock Unit Account. Annual Stock Units and Initial Stock Units credited to the Eligible Director's Career Stock Unit Account pursuant to this Section 6(b) or pursuant to Section 6(a) above are referred to as "*Career Stock Units*".

(c) Limitation on Transfer. Any Director Stock awarded under the Plan may not be sold, transferred, pledged, assigned or otherwise conveyed by an Eligible Director for a period of six (6) months from the date such Director Stock is awarded. Neither Annual Stock Units nor Initial Stock Units may be sold, transferred, pledged, assigned or otherwise conveyed by an Eligible Director. The shares delivered upon conversion of Annual Stock Units and Initial Stock Units will not be subject to any transfer restrictions, other than those that may arise under securities laws or the Company's policies.

(d) No Effect on Prior Initial Awards or Prior Subsequent Awards. The provisions of this Section 6 apply to all Initial Awards and Subsequent Awards made on or after the Stock Unit Transition Date. Nothing herein shall alter the grants of Initial Awards and Subsequent Awards made prior to the Stock Unit Transition Date.

Section 7. Vesting Schedule

(a) Initial Stock Units. The Initial Stock Units shall be fully vested upon grant.

(b) Annual Stock Units. The Annual Stock Units shall vest in 12 substantially equal installments on the first day of each month beginning on the applicable Annual Grant Date, assuming that the Eligible Director continues to serve as a director of the Company through the first day of the relevant month.

Section 8. Death, Disability and Governmental Service

(a) Death or Disability. All of an Eligible Director's unvested Stock Units will vest in full as of the date of the Eligible Director's termination of service on the Board due to death or Disability. Notwithstanding any election made by an Eligible Director on any Deferral Election Form or any other provision of the Plan, in the event of such Eligible Director's death, all amounts credited to such Eligible Director's Cash Account, Current Stock Unit Account and Career Stock Unit Account, and any Deferred Amount that has not yet been credited to such Eligible Director's Cash Account or Current Stock Unit Account, will be paid in a lump sum to the Eligible Director's beneficiary (or if no beneficiary has been designated, to such Eligible Director's estate) upon the Eligible Director's death, *provided* that such beneficiary

or the legal representative of such Eligible Director's estate, as applicable, notifies the Company of the Eligible Director's death within 60 days following death. Following an Eligible Director's termination of service on the Board due to Disability, distributions under the Plan will be made in accordance with the Eligible Director's Deferral Election, and in the absence of a Deferral Election, as provided in Section 9(a).

(b) Governmental Service Resignation. Notwithstanding any election made by an Eligible Director on any Deferral Election Form, if an Eligible Director resigns as a director of the Company as a result of accepting employment at a governmental department or agency, self-regulatory agency or other public service employer (a "*Governmental Employer*") (such resignation is referred to herein as a "*Governmental Service Resignation*"), then (i) if the Eligible Director provides the Company with satisfactory evidence demonstrating that as a result of such employment, the divestiture of his or her continued interest in Company equity awards or continued ownership of Stock is reasonably necessary to avoid the violation of U.S. federal, state or local or foreign ethics law or conflicts of interest law applicable to the Eligible Director at such Governmental Employer, all of an Eligible Director's unvested Stock Units will vest in full as of the date of the Eligible Director's Governmental Service Resignation, all amounts credited to the Eligible Director's Current Stock Unit Account and Career Stock Unit Account will be distributed in a lump sum in accordance with Section 9(g), and all transfer restrictions will lift on shares of Director Stock held by the Eligible Director, on the date of such Governmental Service Resignation, and (ii) if the Eligible Director provides the Company with satisfactory evidence demonstrating that as a result of such employment, the divestiture of the Eligible Director's continued interest in his or her Cash Account is reasonably necessary to avoid the violation of U.S. federal, state or local or foreign ethics law or conflicts of interest law applicable to the Eligible Director at such Governmental Employer, all amounts credited to the Eligible Director's Cash Account will be distributed in a lump sum on the date of such Governmental Service Resignation.

(c) Governmental Service following Resignation. Notwithstanding any election made by an Eligible Director on any Deferral Election Form, if, following an Eligible Director's Service Termination Date, the Eligible Director accepts employment with a Governmental Employer, then (i) upon providing the Company with satisfactory evidence demonstrating that as a result of such employment the divestiture of the Eligible Director's continued interest in Company equity awards or continued ownership of Stock is reasonably necessary to avoid the violation of U.S. federal, state or local or foreign ethics law or conflicts of interest law applicable to the Eligible Director at such Governmental Employer, all amounts credited to the Eligible Director's Current Stock Unit Account and Career Stock Unit Account will be distributed in a lump sum in accordance with Section 9(g), and all transfer restrictions will lift on shares of Director Stock held by the Director, on the date on which the Eligible Director provides the Company with such satisfactory evidence, and (ii) if the Eligible Director provides the Company with satisfactory evidence demonstrating that as a result of such employment, the divestiture of the Eligible Director's continued interest in his or her Cash Account is reasonably necessary to avoid the violation of U.S. federal, state or local or foreign ethics law or conflicts of interest law applicable to the Eligible Director at such Governmental Employer, all amounts credited to the Eligible Director's Cash Account will be distributed in a lump sum on the date on which the Eligible Director provides the Company with such satisfactory evidence.

Section 9. Distributions and Deferral Elections

(a) Distributions. Distributions from an Eligible Director's Current Stock Unit Account in respect of Current Stock Units as to which an Eligible Director has not made a Deferral Election will be made, subject to the other provisions of this Plan, in a lump sum on the first anniversary of the date of grant. Distributions from an Eligible Director's Career Stock Unit

Account in respect of Career Stock Units as to which an Eligible Director has not made a Deferral Election will be made, subject to the other provisions of this Plan, in a lump sum on such Eligible Director's Service Termination Date. Notwithstanding any provision to the contrary in this Plan or any Deferral Election Form, no amounts credited to an Eligible Director's Career Stock Unit Account shall be distributed prior to such Eligible Director's Service Termination Date.

(b) Deferral of Retainers. An Eligible Director may make a Deferral Election to defer receipt of such Eligible Director's Retainers for a given service period. An Eligible Director may make such a Deferral Election by submitting a Deferral Election Form to the Secretary, indicating whether distributions are to be made in:

(i) a lump sum on such Eligible Director's Service Termination Date; or

(ii) installments in accordance with Section 9(f).

A Deferral Election pursuant to this Section 9(b) must relate to all Retainers to be earned by an Eligible Director during a given service period. Deferral Election Forms must be submitted prior to the start of the calendar year during which the services giving rise to such Retainer to be deferred begin; *provided*, *however*, that in the case of an Eligible Director who is newly elected or appointed to the Board, such Eligible Director's Deferral Election Form relating to the Retainer earned during the service period commencing on the date of such election or appointment may be submitted within 30 days after the date of such election or appointment. In all cases, a Deferral Election Form shall be effective only with respect to Retainers that are earned after the Deferral Election is made. An Eligible Director may make only one Deferral Election covering Retainers to be earned during a given service period (so that an Eligible Director may not, for example, make one Deferral Election relating to the Annual Retainer and a different Deferral Election relating to a Committee Retainer). Deferral Elections (including indications on the Deferral Election Form as to form of distributions), once made, shall be irrevocable. Notwithstanding the foregoing, a Deferral Election may be superseded with respect to future deferrals of an Eligible Director's Retainers by submitting a new Deferral Election Form to the Secretary, in which case such new Deferral Election shall be effective starting with the Retainer earned in the service period that begins in the calendar year following the calendar year in which such new Deferral Election Form is submitted.

(c) Crediting of Deferrals of Retainers. Deferrals of an Eligible Director's Retainers shall be allocated to a Current Stock Unit Account. As of each Retainer Payment Date, the Company shall credit the Eligible Director's Current Stock Unit Account with a number of Elective Stock Units determined by dividing (X) the Deferred Amount of Retainers that otherwise would be paid in cash on such Retainer Payment Date by (Y) the Fair Market Value of a share of Stock on such Retainer Payment Date.

(d) Deferrals of Current Stock Units. An Eligible Director may make a Deferral Election to defer receipt of the Current Stock Units to be earned for a given service period by submitting a Deferral Election Form to the Secretary indicating whether distributions are to be made in:

(i) a lump sum on such Eligible Director's Service Termination Date;

or

(ii) installments in accordance with Section 9(f).

A Deferral Election pursuant to this Section 9(d) must relate to all Current Stock Units to be earned by an Eligible Director during a given service period. Deferral Election Forms must be submitted prior to the start of the calendar year during which the services giving rise to such

Current Stock Units to be deferred begin; *provided*, *however*, that in the case of an Eligible Director who is newly elected or appointed to the Board, such Eligible Director's Deferral Election Form relating to the Current Stock Units earned during the service period commencing on the date of such election or appointment (that is, 50% of the Eligible Director's Initial Stock Units) may be submitted within 30 days after the date of such election or appointment. In all cases, a Deferral Election Form shall be effective only with respect to Current Stock Units that are earned after the Deferral Election is made. Deferral Elections (including indications on the Deferral Election Form as to form of distributions), once made, shall be irrevocable. Notwithstanding the foregoing, a Deferral Election may be superseded with respect to future deferrals of an Eligible Director's Current Stock Units by submitting a new Deferral Election Form to the Secretary, in which case such new Deferral Election shall be effective starting with the Current Stock Units earned in the service period that begins in the calendar year following the calendar year in which such new Deferral Election Form is submitted.

(e) Deferrals of Career Stock Units. An Eligible Director may elect to defer receipt of the Career Stock Units to be earned for a given service period by submitting a Deferral Election Form to the Secretary indicating the distributions are to be made in installments in accordance with Section 9(f).

A Deferral Election pursuant to this Section 9(e) must relate to all Career Stock Units to be earned by an Eligible Director during a given service period. Deferral Election Forms must be submitted prior to the start of the calendar year during which the services giving rise to such Career Stock Units to be deferred begin; *provided*, *however*, that in the case of an Eligible Director who is newly elected or appointed to the Board, such Eligible Director's Deferral Election Form relating to the Career Stock Units earned during the service period commencing on the date of such election or appointment (that is, 50% of the Eligible Director's Initial Stock Units) may be submitted within 30 days after the date of such election or appointment. In all cases, a Deferral Election Form shall be effective only with respect to the Career Stock Units that are earned after the Deferral Election is made. Deferral Elections (including indications on the Deferral Election Form as to form of distributions), once made, shall be irrevocable. Notwithstanding the foregoing, a Deferral Election relating to Career Stock Units may be superseded with respect to future deferrals by submitting a new Deferral Election Form to the Secretary, in which case such new Deferral Election shall be effective starting with the Career Stock Units earned in the service period that begins in the calendar year following the calendar year in which such new Deferral Election Form is submitted.

(f) Installment Distributions. Installment distributions shall be made in no more than five annual installments commencing in the calendar year following the year in which the Eligible Director's Service Termination Date occurs. The amount to be distributed in any installment pursuant to a specific Deferral Election Form shall be determined by dividing the number of Stock Units in the Career Stock Unit Account and/or the Current Stock Unit Account, as applicable, that are subject to such Deferral Election Form by the number of remaining installments. Undistributed Deferred Amounts remain subject to the provisions of this Section 9.

(g) Form of Distributions. Distributions made from the Current Stock Unit Account and the Career Stock Unit Account shall be for a number of whole shares of Stock equal to the number of whole Stock Units to be distributed and cash in lieu of any fractional share (determined by using the Fair Market Value of a share of Stock on the date on which such distributions are distributed). All distributions from the Cash Account shall be paid in cash.

(h) Dividend Equivalents. If there are Stock Units in an Eligible Director's Current Stock Unit Account or Career Stock Unit Account on a dividend record date with respect to the Company's Stock, the Current Stock Unit Account or Career Stock Unit Account, as

applicable, shall be credited, on the dividend payment date for such dividend record date, with an additional number of Stock Units ("*Dividend Equivalents*") equal to:

(i) the cash dividend paid on one share of Stock; *multiplied by*

(ii) the number of Stock Units in such Account on such dividend record date; with the product of (i) and (ii) *divided by*

(iii) the Fair Market Value of a share of Stock on the dividend payment date.

Dividend Equivalents credited in respect of Stock Units subject to vesting shall be fully vested upon grant.

(i) No Effect on Prior Deferral Elections. The provisions of this Section 9 apply to all Deferral Elections made on or after the Stock Unit Transition Date. Nothing herein shall alter the terms of effective Deferral Elections made prior to the Stock Unit Transition Date.

(j) Date of Payment. Unless the Plan Administrator determines otherwise, whenever a Deferral Election specifies a calendar year for payment of all or a portion of a Deferred Amount, such payment shall be made on January 2 of the specified calendar year

(k) Rule of Construction for Timing of Payment. Whenever a Deferral Election or the Plan provides for payment upon a specified event or date, such payment will be considered to have been timely made, and neither the Eligible Director nor any of his or her beneficiaries or estate shall have any claim against the Company for damages based on a delay in payment, and the Firm shall have no liability to the Eligible Director (or to any of his or her beneficiaries or estate) in respect of any such delay, as long as payment is made by December 31 of the year in which occurs the applicable specified event or date or, if later, by the 15th day of the third calendar month following such specified event or date.

(l) Deferral of Meeting Fees. As of the Stock Option Transition Date, the Company does not pay Meeting Fees. In the event that the Company determines in the future to pay Meeting Fees to Eligible Directors, and in the case of Meeting Fees deferred prior to the Stock Option Transition Date, the provisions of this Section 9 relating to elective deferrals of Retainers, and the provisions of Section 11 relating to Stock Elections, shall apply to such Meeting Fees mutatis mutandis; *provided*, *however*, that any Deferred Amount resulting from deferral of all or part of an Eligible Director's Meeting Fees (other than Meeting Fees for meetings of the Board or any committee thereof held on the date of an Annual Meeting) will initially be credited to the Cash Account as of the date on which the Eligible Director becomes entitled to payment of the Meeting Fees, shall thereafter be credited with Interest Equivalents as calculated under this Section 9(l) (such Deferred Amount as increased by such Interest Equivalents being the "*Adjusted Deferred Amount*") and will thereafter be debited from the Cash Account and credited to the Eligible Director's Current Stock Unit Account as of the date of the next Annual Meeting following the date of such meeting (or, if the Eligible Director's service on the Board terminates prior to the next Annual Meeting following the date of such meeting, as of the first business day following his or her Service Termination Date), with the number of Stock Units credited to the Current Stock Unit Account being the amount obtained by dividing (i) the relevant Adjusted Deferred Amount by (ii) the Fair Market Value of a share of Stock on the date of such Annual Meeting or the Service Termination Date, as applicable. As of the last day of each fiscal quarter and the Eligible Director's Service Termination Date, the Eligible Director's Cash Account will be credited with an Interest Equivalent equal to (i) the Rate of Interest, multiplied by (ii) the Average Daily Cash Balance, multiplied by (iii) the number of days during the fiscal quarter or other period during which such Cash Account had a positive balance, divided by (iv) 365.

Section 10. Designation of Beneficiaries

An Eligible Director may designate one or more beneficiaries to receive any distributions under the Plan upon the Eligible Director's death, and may change such designation at any time by submitting a new beneficiary designation form to the Secretary.

Section 11. Election to Receive Stock

(a) Effective as of November 1, 2018 (the "*Stock Transition Date*"), an Eligible Director may no longer make a Stock Election under the Plan.

(b) Section 11(a) shall not impair the rights of any person who received all or any part of such person's Retainers in shares of Stock awarded under the Plan prior to the Stock Transition Date. All such shares of Stock shall remain subject to the terms and conditions applicable thereto.

(c) The following terms and conditions apply to Stock Elections and shares of Stock issued under the Plan pursuant to a Stock Election prior to the Stock Transition Date:

(i) Payment in Stock. As of each Retainer Payment Date, an Eligible Director who has made a Stock Election will receive, in lieu of the Retainer elected to be received in Stock, a whole number of shares of Stock (but not fractional shares) determined by dividing:

(A) the amount of the Retainer that is payable to the Eligible Director on the applicable Retainer Payment Date and is subject to a Stock Election; by

(B) the Fair Market Value of a share of Stock on such Retainer Payment Date.

In no circumstances shall an Eligible Director be entitled to receive, or shall the Company have any obligation to issue to the Eligible Director, any fractional share of Stock. In lieu of any fractional share of Stock, the Eligible Director shall be entitled to receive, and the Company shall be obligated to pay to such Eligible Director, cash equal to the value of any fractional share of Stock (determined by using the Fair Market Value of a share of Stock on such Retainer Payment Date).

(d) Notwithstanding Section 11(a), shares of Stock awarded at an Eligible Director's election pursuant to this Section 11 remain one of the types of award that the stockholders of the Company have authorized for the Plan, and Section 11(a) shall not impair the authority of the Board under Section 15 to amend the Plan in the future to provide for awards of shares of Stock without obtaining additional stockholder approval.

Section 12. Fair Market Value

"*Fair Market Value*" shall mean, with respect to each share of Stock for any day:

(a) if the Stock is listed for trading on the New York Stock Exchange, (i) the volume weighted average price of the Stock, reflecting composite trading between 9:30 a.m. and 4:00 p.m. (Eastern time) on such date, as reported by the Bloomberg Professional Service on the MS Equity Volume at Price page under the "VWAP" field, at 4:00 p.m. on such date, rounded up to the nearest whole cent, or, if not so reported, as reported by another third party source to which the Company has access on such date, or if no such reported sale of the Stock shall have occurred on such date, on the most recent date on which such a reported sale occurred; or (ii) if the volume weighted average price is not available from a third party source to which the

Company has access on such date or on the most recent date on which a reported sale occurred, "Fair Market Value" will be the average of the high and low prices of the Stock as reported on the Consolidated Transaction Reporting System on such date, or if no such reported sale of the Stock shall have occurred on such date, on the most recent date on which such a reported sale occurred; or

(b) if the Stock is not so listed, but is listed on another national securities exchange, the closing price, regular way, of the Stock on such exchange, rounded up to the nearest whole cent, on which the largest number of shares of Stock have been traded in the aggregate on the preceding twenty trading days, or, if no such reported sale of the Stock shall have occurred on such date on such exchange, on the most recent date on which such a reported sale occurred on such exchange, or

(c) if the Stock is not listed for trading on a national securities exchange, the average of the closing bid and asked prices as reported by the National Association of Securities Dealers, rounded up to the nearest whole cent, or, if no such prices shall have been so reported for such date, on the most recent date for which such prices were so reported.

Section 13. Issuance of Stock

(a) Restrictions on Transferability. All shares of Stock delivered under the Plan shall be subject to such stop-transfer orders and other restrictions as the Company may deem advisable or legally necessary under any laws, statutes, rules, regulations and other legal requirements, including, without limitation, those of any stock exchange upon which the Stock is then listed and any applicable federal, state or foreign securities law.

(b) Compliance with Laws. Anything to the contrary herein notwithstanding, the Company shall not be required to issue any shares of Stock under the Plan if, in the opinion of legal counsel to the Company, the issuance and delivery of such shares would constitute a violation by the Eligible Director or the Company of any applicable law or regulation of any governmental authority, including, without limitation, federal and state securities laws, or the regulations of any stock exchanges on which the Company's securities may then be listed.

Section 14. Withholding Taxes

The Company may require as a condition of delivery of any shares of Stock that the Eligible Director remit (i) in cash, (ii) by tendering (or attesting to the ownership of) shares of Stock that the Company determines will not result in unfavorable accounting treatment or (iii) by the Company withholding shares of Stock, an amount sufficient to satisfy all foreign, federal, state, local and other governmental withholding tax requirements relating thereto (if any) and, exclusively in the case of an award that does not constitute a deferral of compensation subject to Section 409A, any or all indebtedness or other obligation of the Eligible Director to the Company or any of its subsidiaries. In the case of any award that constitutes a deferral of compensation subject to Section 409A, the Company may not withhold shares of Stock to satisfy obligations that an Eligible Director owes to the Company or any of its subsidiaries other than with respect to taxes or other governmental charges imposed on amounts received by the Eligible Director pursuant to such award, except to the extent such withholding is not prohibited by Section 409A and would not cause the Eligible Director to recognize income for United States federal income tax purposes prior to the time of payment of the award or to incur interest or additional tax under Section 409A. Any shares tendered or withheld pursuant to this Section 14 will be valued at Fair Market Value on the relevant payment or exercise date, as applicable.

Section 15. Plan Amendments and Termination

The Board may suspend or terminate the Plan at any time, in whole or in part. Termination of the Plan shall not adversely affect the rights of Eligible Directors in Career Stock Unit Accounts, Cash Accounts and Current Stock Unit Accounts outstanding at the time of termination. Notwithstanding any termination of the Plan, distributions to Eligible Directors in respect of their Career Stock Unit Accounts, Cash Accounts and Current Stock Unit Accounts shall be made at the times and in the manner provided herein.

The Board may also alter, amend or modify the Plan at any time. These amendments may include (but are not limited to) changes that the Board considers necessary or advisable as a result of changes in, or the adoption or interpretation of, any law, regulation, ruling, judicial decision or accounting standards (collectively, "*Legal Requirements*"). The Board may not amend or modify the Plan in a manner that would materially impair an Eligible Director's rights in any Career Stock Unit Account, Cash Account or Current Stock Unit Account without the Eligible Director's consent; *provided*, *however*, that the Board may, without an Eligible Director's consent, amend or modify the Plan in any manner that it considers necessary or advisable to comply with any Legal Requirement or to ensure that amounts credited to an Eligible Director's Career Stock Unit Account, Cash Account or Current Stock Unit Account are not subject to federal, state or local income tax prior to payment.

Notwithstanding the foregoing, if any provision of this Plan would, in the reasonable, good faith judgment of the Company, result in or likely result in the imposition on any Eligible Director or any other person of any tax, interest or penalty under Section 409A, the Company may reform this Plan or any provision hereof, without the consent of any Eligible Director, in the manner that the Company reasonably and in good faith determines to be necessary or advisable to avoid the imposition of such tax, interest or penalty; *provided*, *however*, that any such reformation shall, to the maximum extent the Company reasonably and in good faith determines to be possible, retain the economic and tax benefits to the Eligible Directors hereunder while not materially increasing the cost to the Company of providing such benefits to the Eligible Directors.

The Board may delegate to the Plan Administrator its authority under this Section 15 to amend any provision of the Plan for which approval by the Board (or a committee thereof) is not required under applicable law or the rules of any national securities exchange on which the Stock is traded.

Section 16. Listing, Registration and Legal Compliance

If the Plan Administrators shall at any time determine that any Consent (as hereinafter defined) is necessary or desirable as a condition of, or in connection with, the granting of any award under the Plan, the issuance or purchase of shares or other rights hereunder or the taking of any other action hereunder (each such action being hereinafter referred to as a "*Plan Action*"), then such Plan Action shall not be taken, in whole or in part, unless and until such Consent shall have been effected or obtained. The term "*Consent*" as used herein with respect to any Plan Action means (i) the listing, registrations or qualifications in respect thereof upon any securities exchange or under any foreign, federal, state or local law, rule or regulation, (ii) any and all consents, clearances and approvals in respect of a Plan Action by any governmental or other regulatory bodies, or (iii) any and all written agreements and representations by an Eligible Director with respect to the disposition of Stock or with respect to any other matter, which the Plan Administrators shall deem necessary or desirable in order to comply with the terms of any such listing, registration or qualification or to obtain an exemption from the requirement that any such listing, qualification or registration be made.

Section 17. Right Reserved

Nothing in the Plan shall confer upon any Eligible Director the right to continue as a director of the Company or affect any right that the Company or any Eligible Director may have to terminate the service of such Eligible Director.

Section 18. Rights as a Stockholder

Except as otherwise provided by the terms of any applicable Benefit Plan Trust, an Eligible Director shall not, by reason of any stock option, Director Stock, Stock Unit or Stock Amount, have any rights as a stockholder of the Company until Stock has been issued to such Eligible Director.

Section 19. Unfunded Plan

The Plan shall be unfunded and shall not create (or be construed to create) a trust or a separate fund or funds. The Plan shall not establish any fiduciary relationship between the Company and any Eligible Director or other person. To the extent any person holds any rights by virtue of a pending grant or deferral under the Plan, such rights shall be no greater than the rights of an unsecured general creditor of the Company. Notwithstanding the foregoing, the Company may (but shall not be obligated to) contribute shares of Stock corresponding to Stock Units to a Benefit Plan Trust, provided that the principal and income of any such Benefit Plan Trust shall be subject to the claims of general creditors of the Company. The Company may amend the terms of any Benefit Plan Trust as applicable to any one or more Eligible Directors in order to procure favorable tax treatment for such Eligible Director(s) or to comply with the laws applicable in any non-U.S. jurisdiction.

Section 20. Governing Law

The Plan is deemed adopted, made and delivered in New York and shall be governed by the laws of the State of New York applicable to agreements made and to be performed entirely within such state.

Section 21. Severability

If any part of the Plan is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity shall not invalidate any portion of the Plan not declared to be unlawful or invalid. Any Section or part of a Section so declared to be unlawful or invalid shall, if possible, be construed in a manner that will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

Section 22. Notices

All notices and other communications hereunder shall be given in writing and shall be deemed given when personally delivered against receipt or five days after having been mailed by registered or certified mail, postage prepaid, return receipt requested, addressed as follows: (a) if to the Company: Morgan Stanley, 1585 Broadway, New York, New York 10036, Attention: Corporate Secretary; and (b) if to an Eligible Director, at the Eligible Director's principal residential address last furnished to the Company. Either party may, by notice, change the address to which notice to such party is to be given.

Section 23. Section Headings

The Section headings contained herein are for the purposes of convenience only and are not intended to define or limit the contents of said Sections.

Section 24. Definitions

As used in the Plan, the following terms shall have the meanings indicated below:

"*Account*" means Cash Account, Career Stock Unit Account or Current Stock Unit Account, as applicable.

"*Adjusted Deferred Amount*" has the meaning set forth in Section 9(l).

"*Annual Grant Date*" has the meaning set forth in Section 6(b).

"*Annual Meeting*" means an annual meeting of the Company's stockholders.

"*Annual Retainer*" means a cash retainer for services as a member of the Board.

"*Annual Service Period*" means the period from the immediately preceding Annual Meeting until the next succeeding Annual Meeting.

"*Annual Stock Units*" means the Stock Units awarded to an Eligible Director pursuant to Section 6(b).

"*Average Daily Cash Balance*" means the sum of the daily balances for a Cash Account for any quarter or shorter period for which the calculation is made, divided by the number of days on which a positive balance existed in such Cash Account.

"*Awards*" means Initial Awards and Subsequent Awards.

"*Benefit Plan Trust*" means any trust established by the Company under which Eligible Directors, or Eligible Directors and participants in designated employee benefit plans of the Company, constitute the principal beneficiaries.

"*Board*" means the board of directors of the Company.

"*Career Stock Unit Account*" means a bookkeeping account to which Initial Stock Units and Annual Stock Units are credited pursuant to Section 6(a) and Section 6(b).

"*Career Stock Units*" has the meaning set forth in Section 6(b).

"*Cash Account*" means a bookkeeping account to which Meeting Fees are credited pursuant to Section 9(l) or which had a positive balance as of the Stock Unit Transition Date.

"*Cause*" means, with respect to any Eligible Director, termination of service on the Board on account of any act of (A) fraud or intentional misrepresentation, or (B) embezzlement, misappropriation or conversion of assets or opportunities of the Company or any affiliate.

"*Committee Retainer*" means a cash retainer for services as a chair of any committee of the Board.

"*Company*" has the meaning set forth in Section 1.

"*Consent*" has the meaning set forth in Section 16.

"*Current Stock Unit Account*" means a bookkeeping account to which Deferred Amounts are credited pursuant to Section 6(a), Section 6(b) or Section 9(c).

"*Current Stock Units*" means Annual Stock Units and Initial Stock Units credited to the Eligible Director's Current Stock Unit Account pursuant to Section 6(a) or Section 6(b).

"*Deferral Election*" means a deferral election by an Eligible Director made with respect to any Retainers, Director Stock, Initial Stock Units and/or Annual Stock Units.

"*Deferral Election Form*" means an election form submitted by an Eligible Director to the Secretary with respect to any Retainers, Director Stock, or Stock Units.

"*Deferred Amount*" means the amount, in dollars, of Retainers, Initial Stock Units and/or Annual Stock Units that an Eligible Director elected to defer in accordance with the terms of the Plan.

"*Director Stock*" means shares of Stock awarded to an Eligible Director for service on the Board. As of the Stock Unit Transition Date, no additional Director Stock will be awarded under the Plan, but Director Stock remains one of the types of award that the stockholders of the Company have authorized for the Plan, and nothing herein shall impair the authority of the Board under Section 15 to amend the Plan in the future to provide for awards of Director Stock without obtaining additional stockholder approval.

"*Disability*" means a "permanent and total disability" as defined in Section 22(e)(3) of the Internal Revenue Code of 1986, as amended.

"*Dividend Equivalents*" has the meaning set forth in Section 9(h).

"*Elective Stock Units*" means Stock Units that an Eligible Director elects to receive in lieu of Retainers pursuant to Section 9(b).

"*Eligible Directors*" has the meaning set forth in Section 2.

"*Fair Market Value*" has the meaning set forth in Section 12.

"*Governmental Employer*" has the meaning set forth in Section 8(b).

"*Governmental Service Resignation*" has the meaning set forth in Section 8(b).

"*Initial Awards*" means any awards made to an Eligible Director pursuant to Section 6(a), including any predecessor version thereof.

"*Initial Stock Units*" means the Stock Units awarded to an Eligible Director pursuant to Section 6(a).

"*Interest Equivalent*" means an additional amount to be credited to a Cash Account calculated in accordance with Section 9(l).

"*Lead Director Retainer*" means a cash retainer for services as the lead director of the Board.

"*Meeting Fees*" means fees (if any) payable to an Eligible Director for participation in meetings of the Board or any committee thereof.

“*Normal Retirement*” means the termination of service on the Board for retirement at or after attaining age 65, other than for Cause, Disability or death.

“*Plan*” has the meaning set forth in Section 1.

“*Rate of Interest*” means the time weighted average interest rate paid by the Company for a quarter, or such shorter period from the end of the preceding quarter to an Eligible Director’s Service Termination Date, to institutions from which it borrows funds.

“*Retainer*” means the Annual Retainer, the Committee Retainer and/or the Lead Director Retainer, as applicable.

“*Retainer Payment Date*” means, with respect to any Retainer, the date on which such Retainer is payable to an Eligible Director.

“*Section 409A*” means Section 409A of the Internal Revenue Code of 1986, as amended, and the rules, regulations and guidance thereunder (or any successor provisions thereto).

“*Service Termination Date*” means the date of an Eligible Director’s termination of service on the Board or such later date as constitutes the Eligible Director’s separation from service with the Company for purposes of Section 409A.

“*Stock*” means the Company’s common stock, par value $0.01 per share, and any other shares into which such stock shall thereafter be changed by reason of any merger, reorganization, recapitalization, consolidation, split-up, combination of shares or similar event as set forth in and in accordance with Section 4.

“*Stock Amount*” means the percentage of the Retainers that an Eligible Director elects to have paid in Stock pursuant to a Stock Election.

“*Stock Election*” means an election by an Eligible Director to receive all or a portion of the Eligible Director’s Retainers in shares of Stock.

“*Stock Option Transition Date*” has the meaning set forth in Section 5(a).

“*Stock Transition Date*” has the meaning set forth in Section 11(a).

“*Stock Unit Transition Date*” means November 16, 2009.

“*Stock Units*” means Initial Stock Units, Annual Stock Units and/or Elective Stock Units, as applicable.

“*Subsequent Awards*” means any awards made to an Eligible Director pursuant to Section 6(b), including any predecessor version thereof.

EXHIBIT 10.8

MORGAN STANLEY
EMPLOYEE STOCK PURCHASE PLAN

Amended and restated as of August 1, 2022

SECTION 1 - PURPOSE

The purpose of the Plan is to secure for the Company and its stockholders the benefits of the incentive inherent in the ownership of Common Stock by current and future Eligible Employees. The Plan is intended to comply with the provisions of Code Section 423 and shall be administered, interpreted and construed in accordance with such provisions.

SECTION 2 - DEFINITIONS

When used herein, the following terms shall have the following meanings:

2.1 "Administrator" means the Board of Directors or such officer or officers of the Company or such committee (which need not be a committee of the Board of Directors, but, if not a committee of the Board of Directors, then the committee shall be comprised solely of officers of the Company) to whom the Board of Directors delegates authority under the Plan in accordance with Section 12.1.

2.2 "Applicable Laws" means the requirements relating to the administration of equity-based awards under U.S. state corporate laws, U.S. federal and state securities laws, the Code, any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws or regulations of any foreign country or jurisdiction where options are, or will be, granted under the Plan.

2.3 "Beneficiary" means such person, persons, or entity as are designated pursuant to Section 12.5 to receive, upon a participant's death, all or a portion of such Participant's Common Stock Account and Payroll Deduction Account.

2.4 "Board of Directors" means the Board of Directors of the Company, or any committee of such Board of Directors as the Board of Directors may determine from time to time.

2.5 "Code" means the Internal Revenue Code of 1986, as amended from time to time, or any successor statute thereto.

2.6 "Common Stock" means common stock, par value $0.01 per share, of the Company.

2.7 "Common Stock Account" means the account established with, and maintained by, the Custodian for the purpose of holding Common Stock purchased pursuant to this Plan.

2.8 "Company" means Morgan Stanley, a Delaware corporation, and its successors and assigns.

2.9 "Custodian" means the agent selected by the Company to hold Common Stock purchased under the Plan.

2.10 "Disability" means disability as defined under the Morgan Stanley Employees Retirement Plan.

2.11 "Eligible Compensation" means the sum of the types and amounts of compensation determined from time to time by the Administrator in its sole discretion to be eligible to be taken into account under the Plan, provided that no such determination shall include or exclude any type or amount of compensation contrary to the requirements of Code Section 423 and any regulations promulgated thereunder.

2.12 "Eligible Employee" means all employees of the Company and its Subsidiaries that have been designated as eligible to participate in the Plan pursuant to and in accordance with rules prescribed by the Administrator from time to time, which rules, however, shall neither permit nor deny participation in the Plan contrary to the requirements of the Code (including, but not limited to, Code Section 423(b)(3), (4), (5), and (8) thereof) and the regulations promulgated thereunder. The Administrator, in its discretion, from time to time may, prior to a Purchase Date for all options to be granted in connection with such Purchase Date in an Offering, determine (on a uniform and nondiscriminatory basis or as otherwise permitted by U.S. Treasury Regulation Section 1.423-2) that the definition of Eligible Employee will or will not include an individual if he or she: (i) has not completed at least two (2) years of service since his or her last hire date (or such lesser period of time as may be determined by the Administrator in its discretion); (ii) customarily works not more than twenty (20) hours per week (or such lesser period of time as may be determined by the Administrator in its discretion); (iii) customarily works not more than five (5) months per calendar year (or such lesser period of time as may be determined by the Administrator in its discretion); (iv) is a highly compensated employee within the meaning of Code Section 414(q); or (v) is a highly compensated employee within the meaning of Code Section 414(q) with compensation above a certain level or is an officer or subject to the disclosure requirements of Section 16(a) of the U.S. Securities Exchange Act of 1934, as amended; *provided* the exclusion is applied with respect to each Offering in an identical manner to all highly compensated individuals of the Employer whose Eligible Employees are participating in that Offering. Each exclusion will be applied with respect to an Offering in a manner complying with U.S. Treasury Regulation Section 1.423-2(e)(2)(ii).

2.13 "Employer" means the employer of the applicable Eligible Employee.

2.14 "Fair Market Value" means the closing price of the Common Stock on the date in question; or if the Common Stock shall not have been traded on such date, such closing price of the Common Stock on the immediately following day on which the Common Stock was traded; or, if the Common Stock was not so traded, such other amount as may be determined by the Board of Directors in its sole discretion.

2.15 "International Supplement" means the document that sets forth supplemental terms and conditions for participation in the Plan by Eligible Employees located or employed outside the United States, as amended from time to time.

2.16 "Offering" means an offer of an option that may be exercised during an Offering Period. For purposes of the Plan, the Administrator may designate separate Offerings under the Plan (the terms of which need not be identical) in which Eligible Employees of one or more Employers will participate, even if the dates of the applicable Offering Periods of each such Offering are identical and the provisions of the Plan will separately apply to each Offering. To the extent permitted by U.S. Treasury Regulation Section 1.423-2(a)(1), the terms of each Offering need not be identical; *provided* that the terms

of the Plan and an Offering together satisfy U.S. Treasury Regulation Section 1.423-2(a)(2) and (a)(3).

2.17 "Offering Period" means the period beginning on the day following a Purchase Date and continuing through the following Purchase Date.

2.18 "Participant" means an Eligible Employee who has met the requirements of Section 3 and has elected to participate in the Plan pursuant to Section 4.1.

2.19 "Payroll Deduction Account" means the bookkeeping entry established by the Company for each Participant pursuant to Section 4.3.

2.20 "Plan" means the Morgan Stanley Employee Stock Purchase Plan as set forth herein and as amended from time to time, together with the International Supplement.

2.21 "Plan Year" means a calendar year.

2.22 "Purchase Date" means the 20th day of each month.

2.23 "Retirement" means retirement as defined by any qualified or non-qualified defined benefit plan sponsored by the Company or a Subsidiary in which an Eligible Employee is a participant on the date such Eligible Employee terminates employment with the Company or any Subsidiary.

2.24 "Subsidiary" means any corporation designated by the Administrator which constitutes a "subsidiary" of the Company, within the meaning of Code Section 424(f).

SECTION 3 - ELIGIBILITY

3.1 **General Rule**. Subject to Section 3.3, each Eligible Employee shall be eligible to participate in the Plan beginning on the later of (i) the Eligible Employee's date of hire by the Company or any Subsidiary and (ii) the date such employee becomes an Eligible Employee. An Eligible Employee who has met the requirements of this Section 3.1 and who ceases to be an Eligible Employee shall again become eligible to participate in the Plan when he again becomes an Eligible Employee.

3.2 **Leave of Absence**. For purposes of the Plan, the employment relationship will be treated as continuing intact while the individual is on sick leave or other leave of absence that the Employer approves or is legally protected under Applicable Laws. Where the period of leave exceeds three (3) months and the individual's right to reemployment is not guaranteed either by statute or by contract, the employment relationship will be deemed to have terminated three (3) months and one (1) day following the commencement of such leave. A Participant who, upon failing to return to work following a leave of absence, is deemed not to be an employee, shall not be entitled to participate in any Offering commencing after such termination of employment, and such Participant's Payroll Deduction Account shall be paid out in accordance with Section 6.2.

3.3 **Termination of Employment**. A Participant whose employment with the Company and its Subsidiaries terminates shall cease to be an Eligible Employee as of, and no options shall be granted to such Participant pursuant to Section 5.2 following, the date of the Participant's termination of employment and any amount credited to such Participant's Payroll Deduction Account shall be applied to purchase shares of Common Stock in connection with the next Purchase Date.

3.4 Common Stock Account. As a condition to participation in this Plan, each Eligible Employee shall be required to hold shares purchased hereunder in a Common Stock Account and such employee's decision to participate in the Plan shall constitute the appointment of the Custodian as custodial agent for the purpose of holding such shares. Such Common Stock Account will be governed by, and subject to, the terms and conditions hereof and of a written agreement between the Company and the Custodian.

SECTION 4 - PARTICIPATION AND PAYROLL DEDUCTIONS

4.1 Enrollment. Each Eligible Employee may elect to participate in the Plan for an Offering Period by completing a Company-specified enrollment process. Upon completing the enrollment process, an Eligible Employee shall commence participation in the Plan on the next practicable Purchase Date. Each Eligible Employee shall be advised of the purchase price (expressed as a percentage of Fair Market Value) determined under Section 5.2(b) before enrolling in the Plan.

4.2 Amount of Deduction. When enrolling, the Eligible Employee shall specify a payroll deduction amount of a percentage (in whole numbers) of Eligible Compensation which shall be withheld from such Eligible Employee's regular paychecks, including bonus and commission paychecks, for the Offering Period *provided, however*, that the Administrator may determine and specify, from time to time, (i) the range of permissible percentages of Eligible Compensation an Eligible Employee may specify to be withheld and (ii) the maximum amount, if any, of Eligible Compensation that may be deducted for an Eligible Employee in any Plan Year, and provided further, that no such determination shall be contrary to the requirements of Code Section 423 and the regulations promulgated thereunder. The Administrator, in its sole discretion, may authorize payment in respect of any option exercised hereunder by personal check, via cash contributions or in such other manner as determined by the Administrator instead of payroll deductions if (i) payroll deductions are prohibited or otherwise problematic under Applicable Law or (ii) the Administrator determines that cash contributions are permissible under Section 423 of the Code. Any reference to "payroll deductions" in this section (or any other section of the Plan) shall similarly cover contributions by other means made pursuant to this Section 4.2.

4.3 Payroll Deduction Accounts. Each Participant's payroll deduction shall be credited, as soon as administratively practicable following the relevant pay date, to a Payroll Deduction Account, pending the purchase of Common Stock in accordance with the provisions of the Plan. All such amounts shall be assets of the Company and may be used by the Company for any corporate purpose. No interest shall accrue or be paid on amounts credited to a Payroll Deduction Account.

4.4 Subsequent Offering Periods. Unless otherwise specified prior to the beginning of any Offering Period by completing a Company-specified process, a Participant shall be deemed to have elected to participate in each subsequent Offering Period for which the Participant is eligible to the same extent and in the same manner as at the end of the prior Offering Period.

4.5 Changes in Participation.

(a) A Participant may cease participation in the Plan by completing a Company-specified process. Such cessation shall become effective on the first day of the first pay period following the completion of such process to which it may be practically applied, whereupon no further payroll deductions shall be made and any amount

credited to the Participant's Payroll Deduction Account shall be applied to purchase shares in connection with the next Purchase Date. To the extent then an Eligible Employee, any Participant who ceased to participate may elect to participate again by completing a Company-specified process. Such resumption of participation will become effective on the first day of the first pay period following the completion of such process to which it may be practically applied.

(b) A Participant may increase or decrease the percentage of Eligible Compensation subject to payroll deduction within the limits approved by the Administrator pursuant to Section 4.2 by completing a Company-specified process. Such increase or decrease shall become effective on the first day of the first pay period following the completion of such process to which it may be practically applied. Notwithstanding any increase in the percentage of Eligible Compensation subject to pay deduction pursuant to this Section 4.5(b), in no event may the amount of Eligible Compensation deducted for an Eligible Employee for any Plan Year exceed the maximum amount authorized to be deducted pursuant to Section 4.2.

(c) Notwithstanding anything herein to the contrary, in the event the Board of Directors determines under Section 5.2(b) to change the purchase price of a share of Common Stock, each Participant shall be advised in advance of the effective date of such change and afforded the opportunity to make a change in participation under Section 4.5(a) or 4.5(b) before such change in the purchase price takes effect.

SECTION 5 - OFFERINGS

5.1 **Maximum Number of Shares**. The Plan will be implemented by making offerings of Common Stock in connection with each Purchase Date until the maximum number of shares of Common Stock available under the Plan have been issued pursuant to the exercise of options.

5.2 **Grant and Exercise of Options**

(a) Subject to Section 5.3, on the first day of each Offering Period, each Participant shall be deemed, subject to Section 5.4, to have been granted an option to purchase the number of shares of Common Stock to be determined for such Offering Period by dividing the amount credited to the Participant's Payroll Deduction Account on the Purchase Date for such Offering Period by the purchase price (as determined in paragraph (b) below); *provided*, *however*, that no such option shall give any Participant the right to purchase more than 1,000 shares as of the relevant date. Without any further action, the Participant shall be deemed to have exercised such option and purchased the number of shares of Common Stock so determined as of the relevant Purchase Date (or, if the Common Stock shall not have been traded on the Purchase Date, the immediately following date on which the Common Stock was traded). If the number of shares determined by dividing the amount credited to the Participant's Payroll Deduction Account on any Purchase Date by the purchase price exceeds 1,000, the amount credited to the Participant's Payroll Deduction Account corresponding to the excess over 1,000 shares shall be applied to the next Offering, subject to Section 5.4(a). All shares purchased under the Plan shall be credited to the Participant's Common Stock Account.

(b) The purchase price for each share of Common Stock shall be expressed as a percentage of Fair Market Value on the Purchase Date (or, if the Common Stock

shall not have been traded on the Purchase Date, the immediately following date on which the Common Stock was traded) and shall be determined from time to time by the Board of Directors, but in no event shall such purchase price be less than 85 percent (85%) of the Fair Market Value of such share on the Purchase Date (or, if the Common Stock shall not have been traded on the Purchase Date, the immediately following date on which the Common Stock was traded).

5.3 **Oversubscription of Shares**. If the total number of shares for which options are exercised in connection with any Purchase Date exceeds the maximum number of shares available for the applicable Offering, the Company shall make an allocation of the shares available for delivery and distribution among the Participants in as nearly a uniform manner as shall be practicable, and the balance of all amounts credited to the Payroll Deduction Accounts shall be applied to the next Offering.

5.4 **Limitations on Grant and Exercise of Options**

(a) No option granted under this Plan shall permit a Participant to purchase stock under all employee stock purchase plans (as defined by Code Section 423(b)) of the Company and any Subsidiary in an amount which, in the aggregate, would exceed $25,000 based on the Fair Market Value of such stock (determined at the time the option is granted) for each calendar year in which the option is outstanding at any time.

(b) No employee who would own, immediately after the option is granted, stock possessing five percent (5%) or more of the total combined voting power or value of all classes of stock of the Company or any Subsidiary (a "5% Owner") shall be granted an option. For purposes of determining whether an employee is a 5% Owner, the rules of Code Section 424(d) shall apply in determining the stock ownership of an individual and stock which the employee may purchase under outstanding options shall be treated as stock owned by the employee.

SECTION 6 - DISTRIBUTIONS OF COMMON STOCK ACCOUNT

6.1 **Restrictions on Distributions**. Subject to the provisions of Section 10.3, shares of Common Stock purchased hereunder (other than shares of Common Stock acquired upon the investment of dividends pursuant to Section 7) cannot be withdrawn from the Plan by a Participant, a former Participant who has terminated employment with the Company and its Subsidiaries, or, in the event of the Participant's death, a Participant's Beneficiary, spouse or estate (determined in accordance with Section 6.4) for a period of twenty-four (24) months immediately following the first day of the Offering Period in connection with which such shares were purchased, unless otherwise determined by the Company consistent with the requirements of Code Section 423.

6.2 **Termination of Employment**. If a Participant's employment with the Company and its Subsidiaries terminates for any reason during an Offering Period, shares credited to the Participant's Common Stock Account may be withdrawn by the Participant from the Plan, subject to the provisions of Section 6.1, or may be sold by the Participant through the Plan.

6.3 **During Employment**. Prior to the Participant's termination of employment with the Company and its Subsidiaries, a Participant may withdraw some or all of the shares credited to the Participant's Common Stock Account, subject to the provisions of Section

6.1, or may sell through the Plan some or all of the shares credited to the Participant's Common Stock Account, subject to the provisions of Section 10.3.

6.4 **Death**. In the event of a Participant's death, all shares credited to the Participant's Common Stock Account may be withdrawn from the Plan, subject to the provisions of Section 6.1, or sold through the Plan by:

(i) the Participant's Beneficiary, or

(ii) if the Company is maintaining procedures pursuant to Section 12.5 pursuant to which a Participant may designate a Beneficiary and no Beneficiary has been so designated or if the Company is not maintaining procedures pursuant to Section 12.5 pursuant to which a Participant may designate a Beneficiary, the Participant's spouse or, if the Participant is not survived by a spouse, the Participant's estate, and any amount credited to the Participant's Payroll Deduction Account shall be applied to purchase shares on the next Purchase Date. Whether a person is a spouse will be determined using the eligibility standards for U.S. Social Security benefits.

6.5 **Sales through the Plan**. Subject to the provisions of Section 10.3, a Participant, a former Participant who has terminated employment with the Company and its Subsidiaries, or, in the event of the Participant's death, a Participant's Beneficiary, spouse or estate (determined in accordance with Section 6.4) may sell shares of Common Stock acquired under the Plan pursuant to procedures established from time to time by the Administrator.

SECTION 7 - DIVIDENDS ON SHARES

A Participant may elect to have all cash dividends paid with respect to shares of Common Stock held in the Participant's Common Stock Account invested automatically in shares of Common Stock purchased at 100 percent (100%) of Fair Market Value on the date such dividend is paid. All non-cash distributions paid on Common Stock held in a Participant's Common Stock Account shall be paid to the Participant (or, in the event of the Participant's death, the Participant's Beneficiary, spouse or estate, determined in accordance with Section 6.4) as soon as administratively practicable.

SECTION 8 - RIGHTS AS A STOCKHOLDER

When a Participant purchases Common Stock pursuant to the Plan or when Common Stock is credited to a Participant's Common Stock Account, subject to the restrictions set forth in Sections 6 and 10.3, the Participant shall have all of the rights and privileges of a stockholder of the Company with respect to the shares so purchased or credited, whether or not certificates representing shares shall have been issued, including, without limitation, the right to vote the Common Stock and to receive cash dividends or other dividends (whether in Common Stock, other securities or other property) thereon.

SECTION 9 - OPTIONS NOT TRANSFERABLE

Neither a Participant's Payroll Deduction Account nor any options granted under the Plan to a Participant may be transferred, pledged or otherwise disposed of in any way (other than by will or the laws of descent and distribution) by a Participant and such options are exercisable during

the Participant's lifetime only by the Participant. Any attempt at such assignment, transfer, pledge or other disposition shall be without effect.

SECTION 10 - COMMON STOCK

10.1 **Reserved Shares**. There shall be reserved for issuance and purchase under the Plan an aggregate of 39,182,870 shares of Common Stock, subject to adjustment as provided in Section 11. Shares subject to the Plan may be shares now or hereafter authorized but unissued, treasury shares, or both.

10.2 **Restrictions on Exercise**. In its sole discretion, the Board of Directors may require as conditions to the exercise of any option that shares of Common Stock reserved for issuance upon the exercise of an option shall have been duly listed on any recognized national securities exchange, and that either a registration statement under the Securities Act of 1933, as amended, with respect to said shares shall be effective, or the Participant shall have represented at the time of purchase, in form and substance satisfactory to the Company, that it is the Participant's intention to purchase the shares for investment only and not for resale or distribution.

10.3 **Restriction on Sale**. Shares of Common Stock purchased hereunder (other than shares of Common Stock acquired upon the automatic investment of dividends pursuant to Section 7) shall not be sellable or transferable by a Participant for a period of twelve (12) months following the first day of the Offering Period in connection with which such shares were purchased.

SECTION 11 - ADJUSTMENT UPON CHANGES IN CAPITALIZATION

In the event of a subdivision or consolidation of the outstanding shares of Common Stock, or the payment of a stock dividend thereon, the number of shares reserved or authorized to be reserved under this Plan shall be increased or decreased, as the case may be, equitably by the Board of Directors. In the event of any other change affecting the Common Stock, such adjustments shall be made equitably by the Board of Directors to give proper effect to such event, subject to the limitations of Code Section 424.

SECTION 12 - ADMINISTRATION

12.1 The Plan shall be administered by the Board of Directors, which may to the extent permitted by law, but need not, delegate some or all of its authority under the Plan to an Administrator. Any delegation hereunder shall be subject to the restrictions and limits that the Board of Directors specifies at the time of such delegation or thereafter. Nothing in the Plan shall be construed as obligating the Board of Directors to delegate authority under this Plan, and the Board of Directors may at any time rescind the authority delegated to an Administrator appointed hereunder or appoint a new Administrator. At all times, an Administrator appointed under this Section 12.1 shall serve in such capacity at the pleasure of the Board of Directors.

12.2 The Board of Directors (and the Administrator, to the extent that the Board of Directors delegates its authority under the Plan pursuant to Section 12.1) shall have full power and authority to construe and interpret the Plan, to prescribe, amend and rescind rules and regulations relating to it, and to make all other determinations necessary or advisable in administering the Plan. All determinations by the Board of Directors (or the Administrator, as the case may be) in carrying out and administering the Plan and in

construing and interpreting the Plan shall be final, binding and conclusive for all purposes and upon all persons interested. In the event of any disagreement between the Board of Directors and the Administrator, the Board of Director's determination on such matter shall be final and binding on all interested persons, including the Administrator.

12.3 No member of the Board of Directors or the Administrator shall be liable for anything whatsoever in connection with the administration of the Plan except such person's own willful misconduct. Under no circumstances shall any member of the Board of Directors or the Administrator be liable for any act or omission of any other member of the Board of Directors or the Administrator. In the performance of its functions with respect to the Plan, the Board of Directors and the Administrator shall be entitled to rely upon information and advice furnished by the Company's officers, the Company's accountants, the Company's counsel and any other party the Board of Directors or the Administrator deems necessary, and no member of the Board of Directors or the Administrator shall be liable for any action taken or not taken in reliance upon any such advice.

12.4 The Company shall pay all the costs of administration of the Plan. Participants shall be responsible for transaction and other fees as may be determined by the Administrator from time to time or required by Applicable Law.

12.5 The Company may maintain procedures pursuant to which a Participant may designate a Beneficiary.

12.6 Notwithstanding the provisions of Section 12.2, the Board of Directors (or any duly appointed Administrator) may establish procedures from time to time relating to the review and determination of claims for benefits under the Plan. Such claims procedures may include appointment of one or more committees, which may be composed of such officers of the Company or other individuals as the Board of Directors (or Administrator, as the case may be) shall determine, to act with respect to any claim for benefits under the Plan. Any such committee shall have such authority as is determined by the Board of Directors (or Administrator, as the case may be), which may include the exclusive discretionary right to interpret the Plan, including those provisions arising under or in connection with the administration of the Plan, including without limitation, the authority to make factual determinations.

SECTION 13 - AMENDMENT AND TERMINATION

13.1 **Amendment**. Subject to the provisions of Code Section 423, the Board of Directors (and the Administrator, to the extent the Board of Directors delegates its authority under this Section 13.1) may amend the Plan in any respect; provided, however, that the Plan may not be amended in any manner that will retroactively impair or otherwise adversely affect the rights of any person to benefits under the Plan which have accrued prior to the date of such action. The Board of Directors may delegate to the Administrator its authority under this Section 13.1 to amend any of the following Sections of the Plan and any other provision of the Plan for which approval by the Board of Directors (or a committee thereof) is not required under Applicable Law or the rules of any national securities exchange on which the Common Stock is traded: Sections 3.3, 4.4, 4.5(a), 4.5(b), 6.4, 15, 16, 17 and 18.

13.2 **Termination**. The Plan will terminate on the Purchase Date that Participants become entitled to purchase a number of shares greater than the number of shares remaining available for purchase. In addition, the Plan may be terminated at any prior time, at the sole discretion of the Board of Directors.

SECTION 14 - GOVERNMENTAL AND OTHER REGULATIONS

The Plan and the grant and exercise of options to purchase shares hereunder, and the Company's obligation to sell and deliver shares upon the exercise of options to purchase shares, shall be subject to all applicable Federal, state and foreign laws, rules and regulations, and to such approvals by any regulatory or governmental agency as, in the opinion of counsel to the Company, may be required.

SECTION 15 - NO ENTITLEMENTS

15.1 The Plan does not create, directly or indirectly, any right for the benefit of any employee or class of employees to purchase any shares from the Company (other than as expressly provided in, and subject to the terms and conditions of, the Plan).

15.2 This Plan shall not be deemed to interfere in any way with the Company's or any Subsidiary's right to terminate, or otherwise modify, an employee's employment at any time. The Plan is not an employment agreement, and nothing in the Plan shall alter any employee's status as an "at-will" employee of the Company or any Subsidiary. The Plan shall not be construed as guaranteeing any employee's employment by the Company or any Subsidiary, or as giving any employee any right to continue in the employ of the Company or any Subsidiary, during any period, nor shall the Plan be construed as giving any employee any right to be reemployed by the Company or any Subsidiary following any termination of employment

15.3 The Company has offered this Plan to Eligible Employees in its sole discretion. This Plan does not confer on any employee any right or entitlement to receive compensation in any specific amount for any future year, and does not diminish in any way the Company's or any Subsidiary's discretion to determine the amount, if any, of any employee's compensation. This Plan is not part of any employee's base salary or wages and will not be taken into account in determining any other employment-related rights any employee may have, such as rights to pension or severance pay.

SECTION 16 - WITHHOLDING

As a condition to receiving shares or cash amounts hereunder, the Company may require the Participant to make a cash payment to the Company of, or the Company may withhold from any shares and cash amounts distributable under the Plan, an amount necessary to satisfy all Federal, state, city or other taxes required to be withheld in respect of such payments pursuant to any law or governmental regulation or ruling.

SECTION 17 - OFFSETS

To the extent permitted by law, the Company shall have the absolute right to withhold any amounts payable to any Participant under the terms of the Plan to the extent of any amount owed for any reason by such Participant to the Company or any Subsidiary and to set off and apply the amounts so withheld to payment of any such amount owed to the Company or any Subsidiary, whether or not such amount shall then be immediately due and payable and in such order or priority as among such amounts owed as the Company, in its sole discretion, shall determine.

SECTION 18 - NOTICES, ETC.

All elections, designations, requests, notices, instructions and other communications from a Participant to the Administrator or the Company required or permitted under the Plan shall be in Company-specified form, and if required to be in writing shall be mailed by first-class mail or delivered to such Company-specified location and shall be deemed to have been given and delivered only upon actual receipt thereof at such location.

SECTION 19 - CAPTIONS, ETC.

The captions of the sections and paragraphs of this Plan have been inserted solely as a matter of convenience and in no way define or limit the scope or intent of any provision of the Plan. References to sections herein are to the specified sections of this Plan unless another reference is specifically stated. Wherever used herein, a singular number shall be deemed to include the plural unless a different meaning is required by the context.

SECTION 20 - EFFECT OF PLAN

The provisions of the Plan shall be binding upon, and inure to the benefit of, all successors of the Company and each Participant, including, without limitation, such Participant's estate and the executors, administrators or trustees thereof, heirs and legatees, and any receiver, trustee in bankruptcy or representative of creditors of such Participant.

SECTION 21 - GOVERNING LAW AND EXCLUSIVE JURISDICTION

21.1 The internal laws of the State of New York shall govern all matters relating to this Plan, without regard to any conflicts or choice of law, rule or principle that might otherwise refer the interpretation of the award to the substantive or procedural law of another jurisdiction, except to the extent superseded by the laws of the United States.

21.2 Unless the Participant is bound by an arbitration agreement with the Company (or its parents, subsidiaries, affiliates, predecessors, successors or assigns) covering any dispute arising out of or in any way connected with the Plan, participation in the Plan or rights under the Plan, the United States District Court for the Southern District of New York shall have exclusive jurisdiction over any such dispute or, if the United States District Court for the Southern District of New York does not have subject matter jurisdiction, the Supreme Court for the State of New York, New York County shall have exclusive jurisdiction.

SECTION 22 - SEVERABILITY

The provisions set forth herein shall be severable and, if any provision of this Plan shall be determined to be legally unenforceable or void, such unenforceable or void provision shall not affect the legality, validity or enforceability of the remaining provisions hereof and may be severed from the remaining provisions as appropriate, to the extent permitted by law. If a tribunal of competent jurisdiction determines that a particular provision set forth herein is invalid, unenforceable, or void under the applicable law in a particular jurisdiction, such provision will not be enforced in that jurisdiction, but shall remain effective and enforceable in all other jurisdictions.

EXHIBIT 10.18

Morgan Stanley Schedule of Non-Employee Directors' Annual Compensation

Effective as of November 1, 2022

retainer[1]	**Amount**
Service as a Non-employee Director	\$100,000
Service as Chair of Audit Committee or Risk Committee	\$ 40,000
Service as Chair of Compensation, Management Development and Succession Committee; Governance and Sustainability Committee; or Operations and Technology Committee	\$ 30,000
Service as Lead Director	\$100,000

(1) The retainer shall be paid semi-annually in arrears for the period from the immediately preceding Annual Meeting of Shareholders until the next succeeding Annual Meeting of Shareholders. 50% of a Director's retainer shall be payable on (or promptly after) the first day of the calendar month following the six-month anniversary of the immediately preceding Annual Meeting of Shareholders. The remaining portion of a non-employee Director's retainer shall be payable on (or promptly after) the first day of the calendar month following the next succeeding Annual Meeting of Shareholders.

In the event a Director joins the Board, and/or commences service as Chair on a Board committee, at a time other than an Annual Meeting of Shareholders, such Director shall be entitled to receive a prorated retainer for service on the Board or such Board committee, as applicable, until the next succeeding Annual Meeting of Shareholders semi-annually in arrears. For purposes of prorating the retainer, service will be credited in full month increments beginning on the first day of the calendar month during which the Director joins the Board, or commences service as Chair of such Board committee. Such retainer(s) shall be payable in accordance with the payment schedule set forth in the immediately preceding paragraph.

In the event a Director terminates from service on the Board, and/or terminates from service as Chair of a Board committee, at a time other than an Annual Meeting of Shareholders, such Director shall be entitled to receive a prorated retainer for service on the Board and/or as Chair of such Board committee. For purposes of prorating the retainer, service will be credited in full month increments ending on the last day of the calendar month immediately preceding the calendar month during which the Director terminates from service as a Director and/or as Chair of a Board Committee, as applicable. Such retainer(s) shall be payable in accordance with the payment schedule set forth in the first paragraph of this fee schedule, *provided that*, in the event the director terminates from service on the Board, such retainer(s) shall be payable upon (or promptly after) the director's Board service termination date.

Notwithstanding the foregoing, a non-employee director may elect to receive the retainer on a deferred basis under the Directors' Equity Capital Accumulation Plan.

EXHIBIT 10.22

Morgan Stanley

Equity Incentive Compensation Plan

[YEAR] LONG-TERM INCENTIVE PROGRAM AWARD

AWARD CERTIFICATE

Table of Contents for Award Certificate

1. Performance stock units generally. 3
2. Performance measures. 3
3. Vesting and conversion. 5
4. Dividend equivalent payments. 7
5. Death, Disability and Full Career Retirement. 8
6. Involuntary termination by the Firm. 10
7. Governmental Service. 11
8. Change in Control. 12
9. Specified employees. 13
10. Cancellation of awards under certain circumstances. 13
11. Tax and other withholding obligations. 17
12. Obligations you owe to the Firm. 17
13. Nontransferability. 18
14. Designation of a beneficiary. 18
15. Ownership and possession. 18
16. Securities law compliance matters. 19
17. Compliance with laws and regulation. 19
18. No entitlements. 19
19. Consents under local law. 20
20. Award modification. 20
21. Governing law. 21
22. Severability. 21
23. Defined terms. 21

Morgan Stanley

[Year] Long-Term Incentive Program Award
Award Certificate

Morgan Stanley has awarded you a [year] long-term incentive program award ("***LTIP Award***") as an incentive for you to remain in Employment and provide services to the Firm. This Award Certificate sets forth the general terms and conditions of your [year] LTIP Award. Your [year] LTIP Award consists of a Target Award of performance stock units. The number of performance stock units comprising the Target Award has been communicated to you independently.

Your LTIP Award is made pursuant to the Plan. References to "performance stock units" and "units" (which terms are used interchangeably) in this Award Certificate mean only those performance stock units included in your [year] LTIP Award, and the terms and conditions herein apply only to such award. If you receive any other award under the Plan or another equity compensation plan, it will be governed by the terms and conditions of the applicable award documentation, which may be different from those herein.

The purpose of your LTIP Award is, among other things, to align your interests with the interests of the Firm and Morgan Stanley's stockholders, to reward you for your continued Employment and service to the Firm in the future and your compliance with the Firm's policies (including the Code of Conduct), to protect the Firm's interests in non-public, confidential and/or proprietary information, products, trade secrets, customer relationships, and other legitimate business interests, and to ensure an orderly transition of responsibilities. In view of these purposes, the number of performance stock units that you earn will depend on the Company's performance during the Performance Period. Moreover, you will earn your LTIP Award only if you (1) remain in continuous Employment through the Scheduled Vesting Date (subject to limited exceptions set forth below), (2) do not engage in any activity that is a cancellation event set forth in Section 10(c) below *and* (3) satisfy obligations you owe to the Firm as set forth in Section 12 below. Even if your LTIP Award has vested, you will have no right to your award if a cancellation event occurs under the circumstances set forth in Section 10(c) below. As Morgan Stanley deems appropriate, Morgan Stanley will require you to provide a written certification or other evidence, from time to time in its sole discretion, to confirm that no cancellation event has occurred, including upon a termination of Employment and/or during a specified period of time prior to the Scheduled Conversion Date. If you fail to timely provide any required certification or other evidence, Morgan Stanley will cancel your award. It is your responsibility to provide the Executive Compensation Department with your up-to-date contact information.

Capitalized terms used in this Award Certificate that are not defined in the text have the meanings set forth in Section 23 below. Capitalized terms used in this Award Certificate that are not defined in the text or in Section 23 below have the meanings set forth in the Plan.

1. <u>Performance stock units generally</u>.

Each performance stock unit included in your LTIP Award corresponds to one share of Morgan Stanley common stock. A performance stock unit constitutes a contingent and unsecured promise of Morgan Stanley to pay you one share of Morgan Stanley common stock on the conversion date for the unit. As the holder of the LTIP Award, you have only the rights of a

general unsecured creditor of Morgan Stanley. You will not be a stockholder with respect to the shares of Morgan Stanley common stock corresponding to your performance stock units unless and until such units convert to shares.

2. Performance measures.[1]

The portion, if any, of your LTIP Award that you earn will be based on Morgan Stanley performance against the performance measures set forth in this Section 2 and the other terms and conditions of this Award Certificate, and may vary from zero to 1.5 times the number of performance stock units included in the Target Award. [In no event will the aggregate multiplier exceed 1.0 if MS ROTCE (excluding any of the specified adjustments) over the Performance Period is less than 9%.]

(a) ***Morgan Stanley's [Return on Equity]/[Return on Tangible Common Equity].*** One-half of the Target Award will be earned based on MS [ROE][ROTCE]. The number of performance stock units that you earn (subject to vesting and the other terms and conditions of your award) based on MS [ROE][ROTCE] will be determined by multiplying the number of performance stock units representing one-half of the Target Award by a multiplier determined as follows:

MS [ROE][ROTCE]	Multiplier
[ ]% or more	[ ]
[ ]%	[ ]
[ ]%	[ ]
Less than [ ]%	0.00

If MS [ROE][ROTCE] is between two thresholds, then the multiplier will be obtained by straight-line interpolation between the two thresholds. If MS [ROE][ROTCE] is less than [ ]%, you will not earn any portion of your LTIP Award as a result of the MS [ROE][ROTCE] measure, and one-half of the Target Award will be canceled.

(b) [***Relative Total Shareholder Return***]/[***Relative Return on Tangible Common Equity***]**.** One-half of the Target Award will be earned based on [Morgan Stanley's Total Shareholder Return]/[MS ROTCE] as compared to the [Total Shareholder Return of each member of the Index Group]/[ROTCE of each member of the Comparison Group]. The number of performance stock units that you earn (subject to vesting and the other terms and conditions of your award) based on [Morgan Stanley's TSR as compared to the TSR of the Index Group will be determined by (i) subtracting the Index Group TSR from Morgan Stanley's TSR ("***Relative TSR***") and (ii)]/[MS ROTCE (excluding any of the specified adjustments) over the Performance Period as compared to the ROTCE of each member of the Comparison Group, as reported in each firm's most recently filed Form 10-K (or equivalent annual report) for each fiscal year during the Performance Period ("***Relative ROTCE***") will be determined by] multiplying the number of performance stock units representing one-half of the Target Award by a multiplier determined as follows[; *provided that*, in no event shall the

[1] The performance measures presented in this form of Award Certificate are indicative. The performance measures applicable to awards may vary.

Relative TSR multiplier exceed 1.00 if Morgan Stanley's TSR for the Performance Period is negative:]

Relative [TSR]/[ROTCE]	Multiplier
[ ] % or more	[ ]
[ ]%	[ ]
[ ]%	[ ]
Less than [ ]%	0.00

If the Relative [TSR]/[ROTCE] is between the thresholds, then the multiplier will be obtained by straight-line interpolation between the two points.

[In the event that any member of the Comparison Group is involved in any event that results in such member ceasing to be traded on a national exchange at any time during the Performance Period or in the event that the Compensation, Management Development and Succession Committee (the "***Committee***") determines, in its sole discretion, that a change in circumstances of a member of the Comparison Group during the Performance Period would cause the inclusion of such entity in the Comparison Group to no longer be appropriate, including, but not limited to, the disposition of or exit from a material business segment, withdrawal from or entry into a geographical region, or a material change in the entity's business or revenue mix, then, in each case, such entity shall be removed as a member of the Comparison Group.]

(c) ***Equitable Adjustments.*** If an event occurs with respect to Morgan Stanley that renders, in the sole determination of the Committee, any of the performance measures set forth in Section 2(a) or Section 2(b) to no longer be appropriate, then the Committee shall equitably adjust the calculation of such measures, as it deems appropriate in its sole discretion, to maintain the intended economics and to carry out the intent of the original terms of your LTIP Award[; provided that, with respect to a member of the Comparison Group's ROTCE, such adjustment shall only be based on publicly reported information.] For example, in the event of any unusual or non-recurring event affecting MS [ROE][ROTCE] [, either positively or negatively, including but not limited to, any gain or loss associated with any acquisition, divestiture or similar event or changes in regulatory regimes, taxation, legislation or accounting principles or accounting standard]/[or any change in applicable tax, legal or regulatory requirements or accounting methods, practices or policies], the Committee shall make equitable adjustments as it deems appropriate in its sole discretion, to MS [ROE][ROTCE] and any other provision of your LTIP Award.

3. <u>Vesting and conversion</u>.

(a) ***Vesting schedule.***[2] Except as otherwise provided in this Award Certificate, you will vest in the portion of your LTIP Award that is earned in accordance with Section 2 on the Scheduled Vesting Date. Except as otherwise provided in this Award Certificate, such portion of your LTIP Award will vest only if you continue to provide future services to the Firm by remaining in continuous Employment through the Scheduled Vesting Date and providing value added services to the Firm during this timeframe. The special vesting terms set forth in Sections 5, 6 and 7 of this Award Certificate apply (i) if your Employment terminates by reason of your death or Disability, (ii) upon your Full Career Retirement, (iii) if the Firm terminates your employment in an involuntary termination under the circumstances described in Section 6 or (iv) upon a Governmental Service Termination.

[2] The vesting schedule and vesting date presented in this form of Award Certificate are indicative. The vesting schedule and vesting date applicable to awards may vary.

Any vested portion of your LTIP Award remains subject to the cancellation and withholding provisions set forth in this Award Certificate.

(b) ***Conversion.***[3] Except as otherwise provided in this Award Certificate, your LTIP Award, to the extent earned and vested, will convert to shares of Morgan Stanley common stock on the Scheduled Conversion Date, with any fractional shares to be distributed in cash. The special conversion provisions set forth in Sections 5(a), 5(b) and 7 of this Award Certificate apply (i) if your Employment terminates by reason of your death or your death occurs after termination of your Employment or (ii) upon your Governmental Service Termination or your employment at a Governmental Employer following your termination of employment with the Firm under circumstances set forth in Section 7(b).

No portion of your LTIP Award will convert to shares of Morgan Stanley common stock following the end of the Performance Period until the Committee certifies the extent to which the performance criteria set forth in Section 2 have been satisfied.

The shares delivered upon conversion of your LTIP Award pursuant to this Section 3(b) will not be subject to any transfer restrictions, other than those that may arise under the securities laws, the Firm's policies or Section 12 below, or to cancellation under the circumstances set forth in Section 10(c), but will be subject to repayment as set forth in Section 3(c).

(c) ***Repayment/Recapture.*** In the event and to the extent the Committee reasonably determines that the performance certified by the Committee, and on the basis of which your LTIP Award was converted to shares of Morgan Stanley common stock, was based on materially inaccurate financial statements or other performance metric criteria, you will be obligated to repay to the Firm:

(1) the number of shares that were delivered upon conversion of your LTIP Award, less the number of shares that would have been delivered had your LTIP Award converted to shares based on accurate financial statements or other performance metric criteria (such number of shares determined in each case by the Committee and before satisfaction of tax or other withholding obligations pursuant to Section 11) (the "***Repayment Shares***"); *provided*, *however*, that to the extent that any of the Repayment Shares have been transferred, you shall repay to the Firm an amount equal to the number of Repayment Shares so transferred multiplied by the fair market value, determined using a valuation methodology established by Morgan Stanley, of Morgan Stanley common stock on the date your LTIP Award converted to shares of Morgan Stanley common stock; plus

(2) any dividend equivalents that were paid on the Repayment Shares when your LTIP Award converted to shares; plus

(3) interest on the amounts described in the preceding clauses (1) and (2) at the average rate of interest Morgan Stanley paid to borrow money from financial institutions during the period from the date of such conversion through the date preceding the repayment date.

[3] The conversion schedule and conversion date presented in this form of Award Certificate are indicative. The conversion schedule and conversion date applicable to awards may vary.

For the avoidance of doubt, your LTIP Award will not be deemed earned if payment of such award is based on materially inaccurate financial statements or other performance metric criteria.

(d) ***Accelerated conversion.*** Morgan Stanley shall have no right to accelerate the conversion of any portion of your LTIP Award or the payment of any of your dividend equivalents, except to the extent that such acceleration is not prohibited by Section 409A and would not result in your being required to recognize income for United States federal income tax purposes before your LTIP Award converts to shares of Morgan Stanley common stock or your dividend equivalents are paid or your incurring additional tax or interest under Section 409A. If your LTIP Award converts to shares of Morgan Stanley common stock or any dividend equivalents are paid prior to the Scheduled Conversion Date pursuant to this Section 3(d), these shares or dividend equivalents may not be transferable and may remain subject to applicable vesting, cancellation and withholding provisions, as determined by Morgan Stanley.

(e) ***Rule of construction for timing of conversion.*** Whenever this Award Certificate provides for your LTIP Award to convert to shares, or your dividend equivalents to be paid, on the Scheduled Conversion Date or upon a different specified event or date, such conversion or payment will be considered to have been timely made, and neither you nor any of your beneficiaries or your estate shall have any claim against the Firm for damages based on a delay in conversion of your LTIP Award (or delivery of Morgan Stanley shares following conversion) or payment of your dividend equivalents, as applicable, and the Firm shall have no liability to you (or to any of your beneficiaries or your estate) in respect of any such delay, as long as conversion or payment, as applicable, is made by December 31st of the year in which occurs the Scheduled Conversion Date or such other specified event or date or, if later, by the 15th day of the third calendar month following such specified event or date, or, in connection with any such conversion due to death, to the extent permissible under Section 409A, by the end of the calendar year following the year of your death. Similarly, neither you nor any of your beneficiaries or your estate shall have any claim against the Firm for damages, and the Firm shall have no liability to you (or to any of your beneficiaries or your estate), based on any acceleration of the conversion of your LTIP Award or payment of your dividend equivalents pursuant to Section 3(d), as applicable.

4. <u>Dividend equivalent payments</u>.

If Morgan Stanley pays a regular or ordinary dividend on its common stock, you will be credited with a dividend equivalent with respect to your LTIP Award to the extent it is outstanding on the dividend record date in an amount equal to the amount of the dividend that would have been paid on a number of shares of Morgan Stanley common stock corresponding to the Target Award. Morgan Stanley will credit the dividend equivalents when it pays the corresponding dividend on its common stock. Your dividend equivalents will vest and be paid in cash at the same time as, and subject to the same vesting and cancellation provisions set forth in this Award Certificate with respect to, your LTIP Award (*provided* that, subject to Section 3(e), the dividend equivalents may be paid following the date on which the LTIP Award converts to shares of Morgan Stanley common stock on the next administratively practicable payroll date). The amount of dividend equivalents paid to you will be based on the number of performance stock units that actually convert to shares and will be paid only if your LTIP Award converts to shares.

In the event your LTIP Award is canceled in full on or before the Scheduled Conversion Date, all dividend equivalents credited to you in respect of regular or ordinary

dividends will be canceled. No dividend equivalents will be paid to you on any portion of your LTIP Award that is canceled.

The decision to pay a dividend and, if so, the amount of any such dividend, is determined by Morgan Stanley in its sole discretion.

5. Death, Disability and Full Career Retirement.

The following special earning, vesting and payment terms apply to your LTIP Award:

(a) ***Death during Employment.*** If your death occurs while Employed, then the number of performance stock units that will vest, and the number of shares of Morgan Stanley common stock the beneficiary you have designated pursuant to Section 14 or the legal representative of your estate, as applicable, will receive as of the date of your death, will be determined by multiplying (i) the number of shares earned based on the performance measures set forth in Section 2 but applied as though the Performance Period ended with the last Morgan Stanley quarter ending simultaneously with or before the date of your death, for which the respective Form 10-K or Form 10-Q has been filed with the Securities and Exchange Commission ("***SEC***") as of the date of your death by (ii) the Pro Ration Fraction, *provided* that your beneficiary or estate notifies the Firm of your death within 60 days following your death; *provided further*, that if your death occurs on or following the Scheduled Vesting Date, then your beneficiary or estate, as applicable, will receive shares (if any) in an amount and at such time that you would have received such shares had your death not occurred[; *provided further*, if your death occurs prior to the filing of the Form 10-K for the first year of the Performance Period, then your beneficiary or estate, as applicable, will receive as of the date of your death a number of shares determined by multiplying (i) the number of shares earned based on a 1.0x multiplier by (ii) the Pro Ration Fraction]. For example, if your death occurs following the end of Morgan Stanley's third quarter (but prior to the end of the fourth quarter) of the second year of the Performance Period and the Form 10-Q has not been filed with the SEC by Morgan Stanley for such quarter, the performance measures will be applied as though the Performance Period ended with Morgan Stanley's second quarter (*provided* Morgan Stanley has filed the Form 10-Q for such quarter with the SEC).

After your death, the cancellation provisions set forth in Section 10(c) will no longer apply. The shares delivered upon conversion of your LTIP Award pursuant to this Section 5(a) will not be subject to any transfer restrictions (other than those that may arise under the securities laws or the Firm's policies) but will be subject to repayment as set forth in Section 3(c).

(b) ***Death after termination of Employment.*** If your death occurs following your termination of Employment as a result of your Disability, Full Career Retirement or an involuntary termination not involving any cancellation event and your LTIP Award was not canceled in connection with your termination or thereafter, then the number of performance stock units that will vest, and the number of shares of Morgan Stanley common stock the beneficiary you have designated pursuant to Section 14 or the legal representative of your estate, as applicable, will receive as of the date of your death, will be determined by multiplying (i) the number of shares that would have been delivered to you based on applying the performance measures set forth in Section 2 as though the Performance Period ended with the last Morgan Stanley quarter ending simultaneously with or before the date of your death for which the respective Form 10-K or Form 10-Q has been filed with the SEC as of the date of your death by (ii) the Pro Ration Fraction determined upon your termination of Employment, *provided* that your beneficiary or estate notifies the Firm of your death within 60

days following your death; *provided further,* that if your death occurs on or following the Scheduled Vesting Date, then your beneficiary or estate, as applicable, will receive shares (if any) in an amount and at such time that you would have received such shares had your death not occurred; [*provided further*, that if your death occurs prior to the filing of the Form 10-K for the first year of the Performance Period, then your beneficiary or estate, as applicable, will receive as of the date of your death, a number of shares determined by multiplying (i) the number of shares earned based on a 1.0x multiplier by (ii) the Pro Ration Fraction determined upon your termination of Employment].

After your death, the cancellation provisions set forth in Section 10(c) will no longer apply. The shares delivered upon conversion of your LTIP Award pursuant to this Section 5(b) will not be subject to any transfer restrictions (other than those that may arise under the securities laws or the Firm's policies) but will be subject to repayment as set forth in Section 3(c).

(c) ***Disability.*** If your Employment terminates due to Disability, then, subject to any transfer restrictions and the cancellation provisions described herein, you will vest in a number of performance stock units, and receive a number of shares of Morgan Stanley common stock on the Scheduled Conversion Date, determined by multiplying (i) the number of shares that would have been delivered to you, based on the performance measures described in Section 2, had you remained in Employment through the Scheduled Conversion Date, by (ii) the Pro Ration Fraction. The cancellation and withholding provisions set forth in this Award Certificate will continue to apply until the Scheduled Conversion Date.

(d) ***Full Career Retirement.***

(1) If your Employment terminates in a termination that satisfies the definition of Full Career Retirement, and other than due to your death or Governmental Service Termination, then subject to any transfer restrictions and the cancellation provisions described herein, and provided that, in the event of an involuntary termination, you sign an agreement and release satisfactory to the Firm, you will vest in a number of performance stock units, and receive a number of shares of Morgan Stanley common stock on the Scheduled Conversion Date, equal to the number of shares that would have been delivered to you, based on the performance measures set forth in Section 2, had you remained in Employment through the Scheduled Conversion Date. The cancellation and withholding provisions set forth in this Award Certificate will continue to apply until the Scheduled Conversion Date.

(2) If your Employment terminates due to your death or Governmental Service Termination and such termination satisfies the definition of a Full Career Retirement, then the number of performance stock units that will vest, and the number of shares of Morgan Stanley common stock you or the beneficiary you have designated pursuant to Section 14 or the legal representative of your estate, as applicable, will receive as of the date of your death or Governmental Service Termination, as applicable, will be the number of shares of Morgan Stanley common stock earned based on the performance measures set forth in Section 2 but applied as though the Performance Period ended with the last Morgan Stanley quarter ending simultaneously with or before the date of your death or Governmental Service Termination, as applicable, for which the respective Form 10-K or Form 10-Q has been filed with the SEC as of such date; *provided that*, in the case of your death, your beneficiary or estate notifies the Firm of your death within 60 days following your death and that if your death occurs on or following the Scheduled Vesting Date, then your beneficiary or estate, as applicable, will receive shares (if any) in an amount and at such time that you would have received such shares had your death not occurred; [*provided further*, that if your termination due to death or

Governmental Service Termination occurs prior to the filing of the Form 10-K for the first year of the Performance Period, then you or your beneficiary or estate, as applicable, will receive as of the date of your death or Governmental Service Termination, as applicable, the number of shares earned based on a 1.0x multiplier;] *provided further*, in the case of a Governmental Service Termination, this Section 5(d)(2) shall apply only if you sign an agreement satisfactory to the Firm relating to your obligations pursuant to Section 7(c).

6. <u>Involuntary termination by the Firm</u>.

If the Firm terminates your employment under circumstances not involving any cancellation event set forth in Section 10(c) and you sign an agreement and release satisfactory to the Firm, then, subject to any transfer restrictions and the cancellation provisions described herein, you will vest in a number of performance stock units, and receive a number of shares of Morgan Stanley common stock on the Scheduled Conversion Date, determined by multiplying (i) the number of shares that would have been delivered to you, based on the performance measures set forth in Section 2, had you remained in Employment through the Scheduled Conversion Date, by (ii) the Pro Ration Fraction. If you do not sign such an agreement and release satisfactory to the Firm within the timeframe set by the Firm in connection with your involuntary termination as described in this Section 6, any portion of your LTIP Award that was unvested immediately prior to your termination shall be canceled. The cancellation and withholding provisions set forth in this Award Certificate will continue to apply until the Scheduled Conversion Date.

7. <u>Governmental Service</u>.

(a) ***General treatment of awards upon Governmental Service Termination.*** If your Employment terminates in a Governmental Service Termination and not involving a cancellation event set forth in Section 10(c), then provided that you sign an agreement satisfactory to the Firm relating to your obligations pursuant to Section 7(c), you will vest in a number of performance stock units, and receive as of the date of your Governmental Service Termination a number of shares of Morgan Stanley common stock, determined by multiplying (i) the number of shares earned based on the performance measures set forth in Section 2 but applied as though the Performance Period ended with the last Morgan Stanley quarter ending simultaneously with or before the effective date of your Governmental Service Termination, for which the respective Form 10-K or Form 10-Q has been filed with the SEC as of the date of your Governmental Service Termination by (ii) the Pro Ration Fraction[; *provided that*, if your Governmental Service Termination occurs prior to the filing of the Form 10-K for the first year of the Performance Period, then you will receive as of the date of your Governmental Service Termination a number of shares determined by multiplying (i) the number of shares earned based on a 1.0x multiplier by (ii) the Pro Ration Fraction].

(b) ***General treatment of vested awards upon acceptance of employment at a Governmental Employer following termination of Employment.*** If (i) your Employment terminates other than in a Governmental Service Termination and not involving a cancellation event set forth in Section 10(c), (ii) your LTIP Award was not canceled in connection with your termination or thereafter, (iii) following your termination of Employment, you accept employment with a Governmental Employer, and (iv) you present the Firm with satisfactory evidence demonstrating that as a result of such employment the divestiture of your continued interest in Morgan Stanley equity awards or continued ownership of Morgan Stanley common stock is reasonably necessary to avoid the violation of U.S. federal, state or local or foreign ethics law or conflicts of interest law applicable to you at such Governmental Employer, then, *provided* that you sign an agreement satisfactory to the Firm relating to your obligations pursuant to Section 7(c), you will receive, upon your commencement of employment with

such Governmental Employer, the number of shares determined by multiplying (x) the number of shares of Morgan Stanley common stock earned based on the performance measures set forth in Section 2 but applied as though the Performance Period ended with the last Morgan Stanley quarter ending simultaneously with or before your acceptance of employment at a Governmental Employer, for which the respective Form 10-K or Form 10-Q has been filed with the SEC as of such date by (y) the Pro Ration Fraction determined upon your termination of Employment[; *provided that*, if your acceptance of employment at a Governmental Employer occurs prior to the filing of the Form 10-K for the first year of the Performance Period, then you will receive, upon your commencement of employment with a Governmental Employer, the number of shares determined by multiplying (x) the number of shares earned based on a 1.0x multiplier by (y) the Pro Ration Fraction determined upon your termination of Employment].

(c) ***Repayment obligation.*** Shares delivered upon conversion of your LTIP Award pursuant to Section 5(d)(2) (upon a Governmental Service Termination that satisfies the definition of a Full Career Retirement), 7(a) or 7(b) will not be subject to any transfer restrictions (other than those that may arise under the securities laws or the Firm's policies) but will be subject to repayment as set forth in Section 3(c). Moreover, if you engage in any activity constituting a cancellation event set forth in Section 10(c) within the applicable period of time that would have resulted in cancellation of all or a portion of your LTIP Award had it not converted to shares pursuant to Section 5(d)(2), 7(a) or 7(b), you will be required to pay to Morgan Stanley an amount equal to:

(1) the number of performance stock units that would have been canceled upon the occurrence of such cancellation event multiplied by the fair market value, determined using a valuation methodology established by Morgan Stanley, of Morgan Stanley common stock on the date your LTIP Award converted to shares of Morgan Stanley common stock; plus

(2) any dividend equivalents that were paid to you on the number of performance stock units described in the foregoing clause (1) when your LTIP Award converted to shares pursuant to Section 5(d)(2), 7(a) or 7(b); plus

(3) interest on the amounts described in the preceding clauses (1) and (2) at the average rate of interest Morgan Stanley paid to borrow money from financial institutions during the period from the date of such conversion through the date preceding the payment date.

8. Change in Control.

In the event of a Change in Control, you will receive on the Scheduled Conversion Date (subject to earlier payment as described in Section 5 upon death and in Section 7 in connection with "Governmental Service" and subject to any transfer restrictions and the cancellation provisions set forth herein) the number of shares earned based on the performance measures in Section 2 but applied as though the Performance Period ended with the last quarter of Morgan Stanley ending simultaneously with or before the effective date of the Change in Control; *provided, however*, that no such payment shall be made if your Employment terminates following the Change in Control, but prior to the Scheduled Vesting Date, for any reason other than for death, Disability, Full Career Retirement, Governmental Service Termination or an involuntary termination not involving any cancellation event. For the avoidance of doubt, following a Change in Control, the provisions of this Award Certificate setting forth the consequences of a termination of employment shall continue to apply (including all provisions governing the timing of payment), except that whenever this Award Certificate

provides for you to receive upon or following a termination of employment a number of shares determined by applying the Pro Ration Fraction, the Pro Ration Fraction shall be applied to the number of shares calculated pursuant to the immediately preceding sentence (e.g., applying the performance measures described herein as though the Performance Period ended with the last quarter of Morgan Stanley ending simultaneously with or before the effective date of the Change in Control).

9. Specified employees.

Notwithstanding any other terms of this Award Certificate, if Morgan Stanley considers you to be one of its "specified employees" as defined in Section 409A at the time of your Separation from Service, any conversion of your LTIP Award and payment of your accrued dividend equivalents that otherwise would occur upon your Separation from Service will be delayed until the first business day following the date that is six months after your Separation from Service; *provided, however*, that in the event that your death, your Governmental Service Termination or your employment at a Governmental Employer following your termination of employment with the Firm under circumstances set forth in Section 7(b) occurs at any time after the Date of the Award, conversion and payment will be made in accordance with Section 5 or 7, as applicable.

10. Cancellation of awards under certain circumstances.

(a) ***Cancellation of unvested awards.*** Your unvested LTIP Award, including any dividend equivalents credited on your award, will be canceled if your Employment terminates for any reason other than death, Disability, a Full Career Retirement, an involuntary termination by the Firm described in Section 6 or a Governmental Service Termination.

(b) ***General treatment of vested awards.*** Except as otherwise provided in this Award Certificate, your LTIP Award, to the extent earned and vested, including any dividend equivalents credited on your award, will convert to shares of Morgan Stanley common stock or be paid, as applicable, on the Scheduled Conversion Date. The cancellation and withholding provisions set forth in this Award Certificate will continue to apply until the Scheduled Conversion Date.

(c) ***Cancellation of awards under certain circumstances.***[4] The cancellation events set forth in this Section 10(c) are designed, among other things, to incentivize compliance with the Firm's policies (including the Code of Conduct), to protect the Firm's interests in non-public, confidential and/or proprietary information, products, trade secrets, customer relationships, and other legitimate business interests, and to ensure an orderly transition of responsibilities. This Section 10(c) shall apply notwithstanding any other terms of this Award Certificate (except where sections in this Award Certificate specifically provide that the cancellation events set forth in this Section 10(c) no longer apply).

Notwithstanding Morgan Stanley's performance based on the measures set forth in Section 2 or your satisfaction of the vesting conditions of this Award Certificate, no portion of your LTIP Award (and any dividend equivalents credited thereon) is earned until the Scheduled Conversion Date (and until you satisfy all obligations you owe to the Firm as set forth in Section 12 below) and, unless prohibited by applicable law, your LTIP Award will be canceled prior to the Scheduled Conversion Date [in full or in part, as determined by the Committee in its sole discretion,] in any of the circumstances set forth below in this Section 10(c). Although you will

---

[4] The cancellation provisions presented in Section 11(c) of this form of Award Certificate and any corresponding definitions are indicative. The cancellation provisions and corresponding definitions applicable to awards may vary.

become the beneficial owner of shares of Morgan Stanley common stock following conversion of your LTIP Award, the Firm may retain custody of your shares following conversion of your LTIP Award (and any dividend equivalents credited thereon) and the lapse of any transfer restrictions pending any investigation or other review that impacts the determination as to whether the LTIP Award (and any dividend equivalents credited thereon) are cancellable under the circumstances set forth below and, in such an instance, the shares underlying your LTIP Award (and any dividend equivalents credited thereon) shall be forfeited in the event the Firm determines that the LTIP Award (and any dividend equivalents credited thereon) were cancellable.

(1) **Competitive Activity.** If you resign from Employment and engage in Competitive Activity before the Scheduled Conversion Date, your LTIP Award, including any dividend equivalents credited on your award, whether or not vested and irrespective of Morgan Stanley's performance based on the measures set forth in Section 2, will be canceled [in full or in part, as determined by the Committee in its sole discretion], subject to applicable law.

(2) **Other Events.** If any of the following events occur at any time before the Scheduled Conversion Date, your LTIP Award, including any dividend equivalents credited on your award, whether or not vested and irrespective of Morgan Stanley's performance based on the measures set forth in Section 2, will be canceled [in full or in part, as determined by the Committee in its sole discretion], subject to applicable law:

(i) Your Employment is terminated for Cause or you engage in conduct constituting Cause (either during or following Employment and whether or not your Employment has been terminated as of the Scheduled Conversion Date);

(ii) Following the termination of your Employment, the Firm determines that your Employment could have been terminated for Cause;

(iii) You disclose Confidential and Proprietary Information to any unauthorized person outside the Firm, or use or attempt to use Confidential and Proprietary Information other than in connection with the business of the Firm; or you fail to comply with your obligations (either during or after your Employment) under the Firm's Code of Conduct (and any applicable supplements) or otherwise existing between you and the Firm, relating to Confidential and Proprietary Information or an assignment, procurement or enforcement of rights in Confidential and Proprietary Information;

(iv) You engage in a Wrongful Solicitation;

(v) You make any Unauthorized Disclosures or Defamatory or Disparaging Comments about the Firm;

(vi) You fail or refuse, following your termination of Employment, to cooperate with or assist the Firm in a timely manner in connection with any investigation, regulatory matter, lawsuit or arbitration in which the Firm is a subject, target or party and as to which you may have pertinent information; or

(vii) You resign from your employment with the Firm without having provided the Firm prior written notice of your resignation consistent with the

notice period requirements undertaken by you in connection with your employment offer letter, Sign-On or Notice & Non-Solicitation Agreement or any other contractual obligation in connection with the terms and conditions of your employment, or, in the event no such prior contractual notice period requirements exist, you resign from your employment with the Firm without having provided the Firm prior written notice of your resignation of at least thirty (30) days.

(3) Clawback Cancellation Events[/Clawback].

(i) Your LTIP Award, including any dividend equivalents credited on your award, whether or not vested and irrespective of Morgan Stanley's performance based on the measures set forth in Section 2, will be canceled in full[or in the case of clause (c) below, in full] or in part, subject to applicable law [and as determined by the Committee in its sole discretion], if before the Scheduled Conversion Date, you take any action, or you fail to take any action (including with respect to direct supervisory responsibilities), where such action or omission:

(a) causes a restatement of the Firm's consolidated financial results;

(b) constitutes a violation by you of the Firm's Global Risk Management Principles, Policies and Standards (where prior authorization and approval of appropriate senior management was not obtained) whether such action results in a favorable or unfavorable impact to the Firm's consolidated financial results; or

(c) causes a loss in the current year on a trade or transaction originating in the current year or in any prior year for which revenue was recognized and which was a factor in your award determination, and violated internal control policies that resulted from your:

- violation of business unit, product or desk specific risk parameters;
- use of an incorrect valuation model, method, or inputs for transactions subject to the "STAR" approval process;
- failure to perform appropriate due diligence prior to a trade or transaction or failure to provide critical information known at the time of the transaction that might negatively affect the valuation of the transaction; or
- failure to timely monitor or escalate to management a loss position pursuant to applicable policies and procedures; or

In the event that the Firm determines, in its sole discretion, that your action or omission is as described in clause (c) and you do not engage in any other

cancellation or clawback event described in this Section 10(c), the Target Award will be reduced by a fraction, the numerator of which is the amount of the pre-tax loss, and the denominator of which is the total revenue originally recognized by the Firm which was a factor in your award determination.

(ii) Your LTIP Award, including any dividend equivalents credited on your award, whether or not vested and irrespective of Morgan Stanley's performance based on the measures set forth in Section 2, may be canceled, in full or in part, if the Committee determines, in its sole discretion, that at any time before the Scheduled Conversion Date you had significant responsibility for a material adverse outcome for the Firm or any of its businesses or functions. The Committee shall have the sole authority to interpret this provision and its determinations shall be final and binding on all persons.

(iii) [Any incentive-based compensation you receive from the Firm (including, without limitation, your LTIP Award, any dividend equivalents credited on such award, whether or not vested, and any amounts or benefits arising from such award) will be subject to any clawback or recoupment policies, procedures, or arrangements adopted by Morgan Stanley to comply with Section 10D of the Securities Exchange Act of 1934, as amended, and any rules promulgated thereunder and/or any other regulatory regimes, as such policies, procedures and arrangements may be amended from time to time and for such time as those policies, procedures and arrangements are required to remain in effect pursuant to applicable law or rules. Notwithstanding anything to the contrary contained herein, your LTIP Award (including any amounts or benefits arising from such award) shall also be subject to any clawback or recoupment arrangements, policies or procedures that the Firm has in place from time to time. The Firm may, to the extent permitted, and shall, to the extent required, by applicable law and rules or by any Firm policy, procedure or arrangement cancel or require reimbursement of your incentive-based compensation (including, without limitation, your LTIP Award, any dividend equivalents credited on such award, whether or not vested, and any amounts or benefits received upon vesting, conversion or settlement of such award or sale of shares of Morgan Stanley common stock underlying such award.]

11. <u>Tax and other withholding obligations.</u>

Any vesting, whether on a Scheduled Vesting Date or some other date, of your LTIP Award (including dividend equivalents that have been credited in respect of your award), and any conversion of your LTIP Award or crediting or payment of dividend equivalents, shall be subject to the Firm's withholding of all required United States federal, state, local and foreign income and employment/payroll taxes (including Federal Insurance Contributions Act taxes). You authorize the Firm to withhold such taxes from any payroll or other payment or compensation to you, including by canceling or accelerating payment of a portion of this award (including any dividend equivalents that have been credited on your LTIP Award) in an amount not to exceed such taxes imposed upon such vesting, conversion, crediting or payment and any additional taxes imposed as a result of such cancellation or acceleration, and to take such other action as the Firm may deem advisable to enable it and you to satisfy obligations for the payment of withholding taxes and other tax obligations, assessments, or other governmental charges, whether of the United States or any other jurisdiction, relating to the vesting or conversion of your LTIP Award or the crediting, vesting or payment of dividend equivalents. However, the Firm may not deduct or withhold such sum from any payroll or any other payment or compensation (including from your LTIP Award), except to the extent it is not prohibited by

Section 409A and would not cause you to recognize income for United States federal income tax purposes before conversion of your LTIP Award or your dividend equivalents are paid or to incur interest or additional tax under Section 409A.

Pursuant to rules and procedures that Morgan Stanley establishes, you may elect to satisfy the tax or other withholding obligations arising upon conversion of your LTIP Award by having Morgan Stanley withhold shares of Morgan Stanley common stock in an amount sufficient to satisfy the tax or other withholding obligations. Shares withheld will be valued using the fair market value of Morgan Stanley common stock on the date your LTIP Award converts (or such other appropriate date determined by Morgan Stanley based on local legal, tax or accounting rules and practices) using a valuation methodology established by Morgan Stanley. In order to comply with applicable accounting standards or the Firm's policies in effect from time to time, Morgan Stanley may limit the amount of shares that you may have withheld.

12. Obligations you owe to the Firm.

As a condition to the earning, payment, conversion or distribution of your award, the Firm may require you to pay such sum to the Firm as may be necessary to satisfy any obligation that you owe to the Firm. Notwithstanding any other provision of this Award Certificate, your award, even if vested, converted or paid, is not earned until after such obligations and any tax withholdings or other deductions required by law are satisfied. Notwithstanding the foregoing, Morgan Stanley may not reduce the number of shares to be delivered upon conversion of your LTIP Award or the amount of dividend equivalents to be paid in respect of your award or delay the payment of your award to satisfy obligations that you owe to the Firm except (i) to the extent authorized under Section 11, relating to tax and other withholding obligations or (ii) to the extent such reduction or delay is not prohibited by Section 409A and would not cause you to recognize income for United States federal income tax purposes before your LTIP Award converts to shares of Morgan Stanley common stock (or your dividend equivalents are paid) or to incur additional tax or interest under Section 409A.

Morgan Stanley's determination of any amount that you owe the Firm shall be conclusive. The fair market value of Morgan Stanley common stock for purposes of the foregoing provisions shall be determined using a valuation methodology established by Morgan Stanley.

13. Nontransferability.

You may not sell, pledge, hypothecate, assign or otherwise transfer your award, other than as provided in Section 14 (which allows you to designate a beneficiary or beneficiaries in the event of your death) or by will or the laws of descent and distribution. This prohibition includes any assignment or other transfer that purports to occur by operation of law or otherwise. During your lifetime, payments relating to your award will be made only to you.

Your personal representatives, heirs, legatees, beneficiaries, successors and assigns, and those of Morgan Stanley, shall all be bound by, and shall benefit from, the terms and conditions of your award.

14. Designation of a beneficiary.

You may make a written designation of beneficiary or beneficiaries to receive all or part of your award to be delivered or paid under this Award Certificate in the event of your death. To make a beneficiary designation, you must complete and submit the Beneficiary Designation form on the Executive Compensation website.

Any shares or dividend equivalents that become deliverable upon your death, and as to which a designation of beneficiary is not in effect, will be distributed to your estate.

If you previously filed a designation of beneficiary form for your equity awards with the Executive Compensation Department, such form will also apply to all of your equity awards, including this award. You may replace or revoke your beneficiary designation at any time. If there is any question as to the legal right of any beneficiary to receive shares or payments under this award, Morgan Stanley may determine in its sole discretion to deliver the shares or make the payments in question to your estate. Morgan Stanley's determination shall be binding and conclusive on all persons and it will have no further liability to anyone with respect to this award.

15. Ownership and possession.

(a) ***Before conversion.*** Generally, you will not have any rights as a stockholder in the shares of Morgan Stanley common stock corresponding to your LTIP Award unless and until your LTIP Award converts to shares. Without limiting the generality of the preceding sentence, you will not have any voting rights with respect to shares corresponding to your LTIP Award until your LTIP Award converts to shares.

(b) ***Following conversion.*** Subject to Sections 3(c) and 10(c), following conversion of your LTIP Award you will be the beneficial owner of the shares of Morgan Stanley common stock issued to you, and you will be entitled to all rights of ownership, including voting rights and the right to receive cash or stock dividends or other distributions paid on the shares.

(c) ***Custody of shares.*** Morgan Stanley may maintain possession of the shares subject to your award until such time as your shares are no longer subject to restrictions on transfer.

16. Securities law compliance matters.

Morgan Stanley may affix a legend to any stock certificates representing shares of Morgan Stanley common stock issued upon conversion of your LTIP Award (and any stock certificates that may subsequently be issued in substitution for the original certificates). The legend will read substantially as follows:

THE SHARES REPRESENTED BY THIS STOCK CERTIFICATE WERE ISSUED PURSUANT TO THE MORGAN STANLEY EQUITY INCENTIVE COMPENSATION PLAN AND ARE SUBJECT TO THE TERMS AND CONDITIONS THEREOF AND OF AN AWARD CERTIFICATE FOR LONG-TERM INCENTIVE PROGRAM AWARDS AND ANY SUPPLEMENT THERETO.

THE SECURITIES REPRESENTED BY THIS STOCK CERTIFICATE MAY BE SUBJECT TO RESTRICTIONS ON TRANSFER BY VIRTUE OF THE SECURITIES ACT OF 1933.

COPIES OF THE PLAN, THE AWARD CERTIFICATE FOR LONG-TERM INCENTIVE PROGRAM AWARDS AND ANY SUPPLEMENT

THERETO ARE AVAILABLE THROUGH THE EXECUTIVE COMPENSATION DEPARTMENT.

Morgan Stanley may advise the transfer agent to place a stop order against such shares if it determines that such an order is necessary or advisable.

17. Compliance with laws and regulation.

Any sale, assignment, transfer, pledge, mortgage, encumbrance or other disposition of shares issued upon conversion of your LTIP Award (whether directly or indirectly, whether or not for value, and whether or not voluntary) must be made in compliance with any applicable constitution, rule, regulation or policy of any of the exchanges or associations or other institutions with which the Firm or a Related Employer has membership or other privileges, and any applicable law or applicable rule or regulation of any governmental agency, self-regulatory organization or state or federal regulatory body.

18. No entitlements.

(a) ***No right to continued Employment.*** This award is not an employment agreement, and nothing in this Award Certificate, the International Supplement, if applicable, or the Plan shall alter your status as an "at-will" employee of the Firm or your employment status at a Related Employer. None of this Award Certificate, the International Supplement, if applicable, or the Plan shall be construed as guaranteeing your employment by the Firm or a Related Employer, or as giving you any right to continue in the employ of the Firm or a Related Employer, during any period (including without limitation the period between the Date of the Award and any of the Scheduled Vesting Date, the Scheduled Conversion Date, or any portion of any of these periods), nor shall they be construed as giving you any right to be reemployed by the Firm or a Related Employer following any termination of Employment.

(b) ***No right to future awards.*** This award, and all other LTIP Awards and other equity-based awards, are discretionary. This award does not confer on you any right or entitlement to receive another LTIP Award or any other equity-based award at any time in the future or in respect of any future period.

(c) ***No effect on future employment compensation.*** Morgan Stanley has made this award to you in its sole discretion. This award does not confer on you any right or entitlement to receive compensation in any specific amount for any future year, and does not diminish in any way the Firm's discretion to determine the amount, if any, of your compensation. This award is not part of your base salary or wages and will not be taken into account in determining any other employment-related rights you may have, such as rights to pension or severance pay.

(d) ***Award terms control.*** In the event of any conflict between any terms applicable to equity awards in any employment agreement, offer letter or other arrangement that you have entered into with the Firm and the terms set forth in this Award Certificate, the latter shall control.

19. Consents under local law.

Your award is conditioned upon the making of all filings and the receipt of all consents or authorizations required to comply with, or required to be obtained under, applicable local law.

20. Award modification.

Morgan Stanley reserves the right to modify or amend unilaterally the terms and conditions of your award, without first asking your consent, or to waive any terms and conditions that operate in favor of Morgan Stanley. These amendments may include (but are not limited to) changes that Morgan Stanley considers necessary or advisable as a result of changes in any, or the adoption of any new, Legal Requirement. Morgan Stanley may not modify your award in a manner that would materially impair your rights in your award without your consent; *provided*, *however*, that Morgan Stanley may, but is not required to, without your consent, amend or modify your award in any manner that Morgan Stanley considers necessary or advisable to (i) comply with any Legal Requirement, (ii) ensure that your award does not result in an excise or other supplemental tax on the Firm under any Legal Requirement, or (iii) ensure that your award is not subject to United States federal, state or local income tax or any equivalent taxes in territories outside the United States prior to conversion of your LTIP Award to shares or delivery of such shares following conversion or the crediting or payment of dividend equivalents. Morgan Stanley will notify you of any amendment of your award that affects your rights. Any amendment or waiver of a provision of this Award Certificate (other than any amendment or waiver applicable to all recipients generally), which amendment or waiver operates in your favor or confers a benefit on you, must be in writing and signed by the Chief Human Resources Officer or the Chief Operating Officer (or if such positions no longer exist, by the holder of an equivalent position) to be effective.

21. Governing law.

This Award Certificate and all rights hereunder shall be governed by, construed and enforced in accordance with the laws of the State of New York, without regard to any conflicts or choice of law, rule or principle that might otherwise refer the interpretation of the award to the substantive [or procedural] law of another jurisdiction. [Unless you are bound by an arbitration agreement with Morgan Stanley (or its parents, subsidiaries, affiliates, predecessors, successors or assigns) covering any dispute arising out of or in any way connected with the Plan or this Award Certificate, your participation in the Plan or rights under the Plan or this Award Certificate, the United States District Court for the Southern District of New York shall have exclusive jurisdiction over any such dispute or, if the United States District Court for the Southern District of New York does not have subject matter jurisdiction, the Supreme Court for the State of New York, New York County shall have exclusive jurisdiction.]

22. [Severability.

The provisions set forth herein shall be severable and, if any provision of this Award Certificate shall be determined to be legally unenforceable or void, such unenforceable or void provision shall not affect the legality, validity or enforceability of the remaining provisions hereof and may be severed from the remaining provisions as appropriate, to the extent permitted by law. If a tribunal of competent jurisdiction determines that a particular provision set forth herein is invalid, unenforceable, or void under the applicable law in a particular jurisdiction, such provision will not be enforced in that jurisdiction, but shall remain effective and enforceable in all other jurisdictions.]

23. Defined terms.

For purposes of this Award Certificate, the following terms shall have the meanings set forth below:

(a) "***Board***" means the Board of Directors of Morgan Stanley.

(b) "***Cause***" means:

(1) any act or omission which constitutes a breach of your obligations to the Firm, including, without limitation, (A) your failure to comply with any notice or non-solicitation restrictions that may be applicable to you or (B) your failure to comply with the Firm's compliance, ethics or risk policies, or management standards, or your failure or refusal to perform satisfactorily any duties reasonably required of you;

(2) your commission of any dishonest or fraudulent act, or any other act or omission, which has caused or may reasonably be expected to cause injury to the interest or business reputation of the Firm; or

(3) your violation of any securities, commodities or banking laws, any rules or regulations issued pursuant to such laws, or rules or regulations of any securities or commodities exchange or association of which the Firm is a member or of any policy of the Firm relating to compliance with any of the foregoing;

provided, that an act or omission shall constitute "Cause" for purposes of this definition if the Firm determines, in its sole discretion, that such action or omission is described in Section 10(c)(3)(c) and is deliberate, intentional or willful.

(c) A "***Change in Control***" shall be deemed to have occurred if any of the following conditions shall have been satisfied:

(1) any one person or more than one person acting as a group (as determined under Section 409A), other than (A) any employee plan established by Morgan Stanley or any of its Subsidiaries, (B) Morgan Stanley or any of its affiliates (as defined in Rule 12b-2 promulgated under the Exchange Act), (C) an underwriter temporarily holding securities pursuant to an offering of such securities, or (D) a corporation owned, directly or indirectly, by stockholders of Morgan Stanley in substantially the same proportions as their ownership of Morgan Stanley, is or becomes, during any 12-month period, the beneficial owner, directly or indirectly, of securities of Morgan Stanley (not including in the securities beneficially owned by such person(s) any securities acquired directly from Morgan Stanley or its affiliates other than in connection with the acquisition by Morgan Stanley or its affiliates of a business) representing 50% or more of the total voting power of the stock of Morgan Stanley; *provided*, *however*, that the provisions of this subsection (1) are not intended to apply to or include as a Change in Control any transaction that is specifically excepted from the definition of Change in Control under subsection (3) below;

(2) a change in the composition of the Board such that, during any 12-month period, the individuals who, as of the beginning of such period, constitute the Board (the "***Existing Board***") cease for any reason to constitute at least 50% of the Board; *provided*, *however*, that any individual becoming a member of the Board subsequent to the beginning of such period whose election, or nomination for election by Morgan Stanley's stockholders, was approved by a vote of at least a majority of the

directors immediately prior to the date of such appointment or election shall be considered as though such individual were a member of the Existing Board;

(3) the consummation of a merger or consolidation of Morgan Stanley with any other corporation or other entity, or the issuance of voting securities in connection with a merger or consolidation of Morgan Stanley (or any direct or indirect subsidiary of Morgan Stanley) pursuant to applicable stock exchange requirements; *provided* that immediately following such merger or consolidation the voting securities of Morgan Stanley outstanding immediately prior thereto do not continue to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity of such merger or consolidation or parent entity thereof) 50% or more of the total voting power of Morgan Stanley stock (or if Morgan Stanley is not the surviving entity of such merger or consolidation, 50% or more of the total voting power of the stock of such surviving entity or parent entity thereof); and *provided* further that a merger or consolidation effected to implement a recapitalization of Morgan Stanley (or similar transaction) in which no person (as determined under Section 409A) is or becomes the beneficial owner, directly or indirectly, of securities of Morgan Stanley (not including in the securities beneficially owned by such person any securities acquired directly from Morgan Stanley or its affiliates other than in connection with the acquisition by Morgan Stanley or its affiliates of a business) representing 50% or more of either the then outstanding shares of Morgan Stanley common stock or the combined voting power of Morgan Stanley's then outstanding voting securities shall not be considered a Change in Control; or

(4) the complete liquidation of Morgan Stanley or the sale or disposition by Morgan Stanley of all or substantially all of Morgan Stanley's assets in which any one person or more than one person acting as a group (as determined under Section 409A) acquires (or has acquired during the 12-month period ending on the date of the most recent acquisition by such person or persons) assets from Morgan Stanley that have a total gross fair market value equal to more than 50% of the total gross fair market value of all of the assets of Morgan Stanley immediately prior to such acquisition or acquisitions.

Notwithstanding the foregoing, (x) no Change in Control shall be deemed to have occurred if there is consummated any transaction or series of integrated transactions immediately following which the record holders of Morgan Stanley common stock immediately prior to such transaction or series of transactions continue to have substantially the same proportionate ownership in an entity which owns substantially all of the assets of Morgan Stanley immediately prior to such transaction or series of transactions and (y) no event or circumstances described in any of clauses (1) through (4) above shall constitute a Change in Control unless such event or circumstances also constitute a change in the ownership or effective control of Morgan Stanley, or in the ownership of a substantial portion of Morgan Stanley's assets, as defined in Section 409A. In addition, no Change in Control shall be deemed to have occurred upon the acquisition of additional control of Morgan Stanley by any one person or more than one person acting as a group that is considered to effectively control Morgan Stanley.

For purposes of the provisions of this Award Certificate, terms used in the definition of a Change in Control shall be as defined or interpreted pursuant to Section 409A.

(d) "***Committee***" means the Compensation, Management Development and Succession Committee of the Board, any successor committee thereto or any other committee of the Board appointed by the Board with the powers of the Committee under the Plan, or any subcommittee appointed by such Committee.

(e) ["***Comparison Group***" consists of the following entities: Bank of America, Barclays, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, JPMorgan Chase, UBS Group and Wells Fargo][5]

(f) "***Competitive Activity***" means:

(1) becoming, or entering into any arrangement as, an employee, officer, partner, member, proprietor, director, independent contractor, consultant, advisor, representative or agent of, or serving in any similar position or capacity with, a Competitor, where you will be responsible for providing, or managing or supervising others who are providing, any services (x) that are similar or substantially related to any services that you provided to the Firm, or (y) that you had direct or indirect managerial or supervisory responsibility for at the Firm, or (z) that call for the application of any of the same or similar specialized knowledge or skills as those utilized by you in your services for the Firm, in each such case, at any time during the year preceding the termination of your employment with the Firm; or

(2) either alone or in concert with others, forming, or acquiring a 5% or greater equity ownership, voting interest or profit participation in, a Competitor.

(g) "***Competitor***" means any corporation, partnership or other entity that engages, or that owns a significant interest in any corporation, partnership or other entity that engages, in any business activity the Firm engages in, or that you reasonably knew or should have known that the Firm was planning to engage in, at the time of the termination of your Employment.

(h) "***Confidential and Proprietary Information***" means any information that is classified as confidential in the Firm's Global Policy on Confidential Information or that may have intrinsic value to the Firm, the Firm's clients or other parties with which the Firm has a relationship, or that may provide the Firm with a competitive advantage, including, without limitation, any trade secrets; inventions (whether or not patentable); formulas; flow charts; computer programs; access codes or other systems information; algorithms; technology and business processes; business, product or marketing plans; sales and other forecasts; financial information; client lists or other intellectual property; information relating to compensation and benefits; and public information that becomes proprietary as a result of the Firm's compilation of that information for use in its business, *provided* that such Confidential and Proprietary Information does not include any information which is available for use by the general public or is generally available for use within the relevant business or industry other than as a result of your action. Confidential and Proprietary Information may be in any medium or form, including, without limitation, physical documents, computer files or discs, electronic communications, videotapes, audiotapes, and oral communications.

(i) "***Date of the Award***" means [insert grant date, which will typically coincide with the beginning of the performance period].

(j) You will be deemed to have made "***Defamatory or Disparaging Comments***" about the Firm if, at any time, you make, publish, or issue, or cause to be made, published or issued, in any medium whatsoever to any person or entity external to the Firm, any derogatory, defamatory or disparaging statement regarding the Firm, its businesses or strategic plans, products, practices, policies, personnel or any other Firm matter. Nothing

[5] The Comparison Group presented in this form of Award Certificate is indicative and may be modified from time to time.

contained herein is intended to prevent you from testifying truthfully or making truthful statements or submissions in litigation or other legal, administrative or regulatory proceedings or internal investigations.

(k) "***Disability***" means any condition that would qualify for a benefit under any group long-term disability plan maintained by the Firm and applicable to you.

(l) "***Employed***" and "***Employment***" refer to employment with the Firm and/or Related Employment.

(m) The "***Firm***" means Morgan Stanley (including any successor thereto) together with its subsidiaries and affiliates. For purposes of the definitions of "Cause," "Confidential and Proprietary Information," "Defamatory or Disparaging Comments," "Unauthorized Disclosures" and "Wrongful Solicitation" set forth in this Award Certificate and Section 10(c)(2)(vi) of this Award Certificate, references to the "Firm" shall refer severally to the Firm as defined in the preceding sentence and your Related Employer, if any. For purposes of the cancellation provisions set forth in this Award Certificate relating to disclosure or use of Confidential and Proprietary Information, references to the "Firm" shall refer to the Firm as defined in the second preceding sentence or your Related Employer, as applicable.

(n) "***Full Career Retirement***" means the termination of your Employment by you or by the Firm for any reason other than under circumstances involving any cancellation event described in Section 10(c) (including due to your Disability, death or Governmental Service Termination), if you have either satisfied the age and service requirements set forth in your employment agreement or offer letter with the Firm or, if you are not party to an employment agreement or offer letter with the Firm (or if such agreement or letter does not include a definition of "Full Career Retirement"), you meet any of the following criteria as of your termination date and, in either case, unless your Employment terminates for reasons of Disability, death or a Governmental Service Termination, [you have provided the Firm 12 months' advance notice of your resignation in a form satisfactory to the Firm]:

(1) you have attained age 50 and completed at least 12 years of service as a [ ][6] of the Firm or equivalent officer title; or

(2) you have attained age 50 and completed at least 15 years of service as an officer of the Firm at the level of [ ][7] or above; or

(3) you have completed at least 20 years of service with the Firm; or

(4) you have attained age 55 and have completed at least 5 years of service with the Firm and the sum of your age and years of service equals or exceeds 65.[8]

For the purposes of the foregoing definition, service with the Firm will include any period of service with the following entities and any of their predecessors:

---

[6] Specified officer title(s) in one or more specified business units.

[7] Specified officer title(s) in one or more specified business units.

[8] Age and service conditions specified in clauses (1) through (4) may vary from year to year and for awards granted to certain employees.

(i) AB Asesores ("***ABS***") prior to its acquisition by the Firm (*provided* that only years of service as a partner of ABS shall count towards years of service as an officer);

(ii) Morgan Stanley Group Inc. and its subsidiaries ("***MS Group***") prior to the merger with and into Dean Witter, Discover & Co.;

(iii) Miller Anderson & Sherrerd, L.L.P. prior to its acquisition by MS Group;

(iv) Van Kampen Investments Inc., FrontPoint Partners LLC, Mesa West Capital LLC, E*TRADE Financial Corporation, Solium Capital, and Eaton Vance Corp., and their respective subsidiaries, in each case, prior to their acquisition by the Firm;

(v) Lend Lease Corporation Limited and its subsidiaries prior to the acquisition of certain of its assets by the Firm; and

(vi) Dean Witter, Discover & Co. and its subsidiaries ("***DWD***") prior to the merger of Morgan Stanley Group Inc. with and into Dean Witter, Discover & Co.;

provided that, in the case of an employee who has transferred employment from DWD to MS Group or vice versa, a former employee of DWD will receive credit for employment with DWD only if he or she transferred directly from DWD to Morgan Stanley & Co. Incorporated or its affiliates subsequent to February 5, 1997, and a former employee of MS Group will receive credit for employment with MS Group only if he or she transferred directly from MS Group to Morgan Stanley DW Inc. or its affiliates subsequent to February 5, 1997.

(o) "***Governmental Employer***" means a governmental department or agency, self-regulatory agency or other public service employer.

(p) "***Governmental Service Termination***" means the termination of your Employment due to your commencement of employment at a Governmental Employer; *provided* that you have presented the Firm with satisfactory evidence demonstrating that as a result of such new employment, the divestiture of your continued interest in Morgan Stanley equity awards or continued ownership of Morgan Stanley common stock is reasonably necessary to avoid the violation of U.S. federal, state or local or foreign ethics law or conflicts of interest law applicable to you at such Governmental Employer.

(q) *["**Index Group**"* means the S&P 500 Financial Sectors Index][9].

(r) "***Internal Revenue Code***" means the United States Internal Revenue Code of 1986, as amended, and the rules, regulations and guidance thereunder.

(s) "***Legal Requirement***" means any law, regulation, ruling, judicial decision, accounting standard, regulatory guidance or other legal requirement.

(t) "***Management Committee***" means the Morgan Stanley Management Committee and any successor or equivalent committee.

---

[9] The Index Group presented in this form of Award Certificate is indicative and may be modified from time to time.

(u) “***MS [ROE][ROTCE]***” means [Morgan Stanley’s return on average common shareholders’ equity, including discontinued operations and extraordinary items][the average of the earnings applicable to Morgan Stanley’s common shareholders as a percentage of average tangible common equity, as reported in the Firm’s most recently filed Form 10-K], for each fiscal year during the Performance Period, adjusted to eliminate the impact of the following items with respect to each such fiscal year: (a) debt valuation adjustments, (b) any individual gain or loss associated with the sale of any Disposal Group at the time of, or subsequent to, it being classified as Held for Sale, (c) any aggregate gains or losses associated with legal settlements and/or accruals related to legal settlements recognized in the fiscal year and relating to business activities conducted prior to January 1, 2011 and (d) any impacts for changes to an existing, or application of a new, accounting principle that are not applied on a fully retrospective basis in the year of adoption and result in a cumulative catch-up adjustment (recorded either as a gain or a loss, or as an adjustment to equity) in the applicable fiscal year.

- For purposes of each of clauses (b) through (d) above, adjustments shall only be made to MS [ROE]/[ROTCE] if the pre-tax amounts equal or exceed $100 million during the applicable fiscal year;
- For purposes of clause (b) above, “Disposal Group” and “Held for Sale,” shall be defined in accordance with US generally accepted accounting principles;
- For purposes of clause (b) above, any gain or loss associated with the sale of a Disposal Group shall include any transaction costs, severance costs, and/or acceleration of unvested deferred compensation awards; and
- For purposes of clause (c) above, such gains or losses shall include any expense (or reversal of expense) recognized during the fiscal year associated with legal proceedings and/or legal settlements.

(v) “***Performance Period***” means the three-year period consisting of the reporting years of Morgan Stanley of [year of the Date of the Award, first year following the Date of the Award and second year following the Date of the Award].

(w) “***Plan***” means the Equity Incentive Compensation Plan, as amended.

(x) “***Pro Ration Fraction***” means a fraction, the numerator of which is the number of days starting with and inclusive of [January 1st immediately preceding the Date of the Award] and ending on the effective date of your termination of Employment and the denominator of which is the number of days in the period beginning on [January 1st immediately preceding the Date of the Award] and ending on the Scheduled Vesting Date.

(y) “***Related Employment***” means your employment with an employer other than the Firm (such employer, herein referred to as a “***Related Employer***”), *provided* that: (i) you undertake such employment at the written request or with the written consent of Morgan Stanley’s Chief Human Resources Officer (or if such position no longer exists, the holder of an equivalent position); (ii) immediately prior to undertaking such employment you were an employee of the Firm or were engaged in Related Employment (as defined herein); and (iii) such employment is recognized by the Firm in its discretion as Related Employment; and, *provided further,* that the Firm may (1) determine at any time in its sole discretion that employment that was recognized by the Firm as Related Employment no longer qualifies as Related Employment, and (2) condition the designation and benefits of Related Employment on such terms and conditions as the Firm may determine in its sole discretion; *provided further*, the Firm will not provide for Related Employment except to the extent such treatment

is not prohibited by Section 409A and would not cause you to recognize income for United States federal income tax purposes before your performance stock units convert to shares (or your dividend equivalents are paid) or to incur additional tax or interest under Section 409A. The designation of employment as Related Employment does not give rise to an employment relationship between you and the Firm, or otherwise modify your and the Firm's respective rights and obligations.

(z) "***Scheduled Conversion Date***" means a date during [third year following the Date of the Award] determined by the Committee.

(aa) "***Scheduled Vesting Date***" means [January 1st of the third year following the Date of the Award].

(bb) "***Section 409A***" means Section 409A of the Internal Revenue Code and any regulations thereunder.

(cc) "***Separation from Service***" means a separation from service with the Firm for purposes of Section 409A determined using the default provisions set forth in Treasury Regulation §1.409A-1(h) or any successor regulation thereto. For purposes of this definition, Morgan Stanley's subsidiaries and affiliates include (and are limited to) any corporation that is in the same controlled group of corporations (within the meaning of Section 414(b) of the Internal Revenue Code) as Morgan Stanley and any trade or business that is under common control with Morgan Stanley (within the meaning of Section 414(c) of the Internal Revenue Code), determined in each case in accordance with the default provisions set forth in Treasury Regulation §1.409A-1(h)(3).

(dd) "***Target Award***" means the number of performance stock units that has been communicated to you separately and that will be earned, subject to the other terms and conditions of this Award Certificate, if each of the multipliers set forth in Sections 2(a) and 2(b) equals 1.

(ee) ["***Total Shareholder Return***" or "***TSR***", as it applies to

(1) Morgan Stanley's common stock, means the percentage change in value (positive or negative) over the Performance Period as measured by dividing (i) the sum of (A) the cumulative value of dividends and other distributions in respect of the common stock for the Performance Period, assuming dividend reinvestment, and (B) the difference (positive or negative) between the common stock price on the first and last days of the Performance Period (calculated on the basis of the average of the adjusted closing prices over the 30-day trading period immediately prior to the first day of the Performance Period and the average of the adjusted closing prices over the 30-day trading period ending on the last day of the Performance Period), by (ii) the common stock price on the first day of the Performance Period, calculated on the basis of the average of the adjusted closing prices over the 30-day trading period immediately prior to the first day of the Performance Period; and

(2) the Index Group, means the percentage change in value (positive or negative) over the Performance Period as measured by dividing (i) the difference (positive or negative) between the closing price of the Index Group on the first and last days of the Performance Period (calculated on the basis of the average of the adjusted closing prices over the 30-day trading period immediately prior to the first day of the Performance Period and the average of the adjusted closing prices over the 30-day trading period ending on the last day of the Performance Period), by (ii) the closing price of the Index Group on the first day of the Performance Period, calculated on the basis of the average of the adjusted closing prices over

the 30-day trading period immediately prior to the first day of the Performance Period. The adjusted closing price of the Index Group on any given date shall be the closing price of the S&P 500 Financial Sectors Index as reported by the Bloomberg Professional Service.]

(ff) You will be deemed to have made "***Unauthorized Disclosures***" about the Firm if, while Employed or following the termination of your Employment, without having first received written authorization from the Firm, you disclose, or participate in the disclosure of or allow disclosure of, any information about the Firm or its present or former clients, customers, executives, officers, directors, or other employees or Board members, or its business or operations, or legal matters involving the Firm and resolution or settlement thereof, or any aspects of your Employment with the Firm or termination of such Employment (which, for the avoidance of doubt, does not prevent you from confirming your employment status with the Firm), whether written, oral or in electronic format, to any reporter, author, producer or similar person or entity or to any general public media in any form (including, without limitation, books, articles or writings of any other kind, as well as film, videotape, television or other broadcasts, audio tape, electronic/Internet or blog format or any other medium).

(gg) A "***Wrongful Solicitation***" occurs upon either of the following events:

(1) while Employed, including during any notice period applicable to you in connection with the termination of your Employment, or within 180 days after the termination of your Employment, directly or indirectly in any capacity (including through any person, corporation, partnership or other business entity of any kind), you hire or solicit, recruit, induce, entice, influence or encourage any Firm employee to leave the Firm or become hired or engaged by another firm; *provided*, *however*, that this clause shall apply only to employees with whom you worked or had professional or business contact, or who worked in or with your business unit, during any notice period applicable to you in connection with the termination of your Employment or during the 180 days preceding notice of the termination of your Employment; or

(2) while Employed, including during any notice period applicable to you in connection with the termination of your Employment, or within 90 days (180 days if you are a member of the Management Committee at the time of notice of termination) after the termination of your Employment, directly or indirectly in any capacity (including through any person, corporation, partnership or other business entity of any kind), you solicit or entice away or in any manner attempt to persuade any client or customer, or prospective client or customer, of the Firm (i) to discontinue or diminish his, her or its relationship or prospective relationship with the Firm or (ii) to otherwise provide his, her or its business to any person, corporation, partnership or other business entity which engages in any line of business in which the Firm is engaged (other than the Firm); *provided*, *however*, that this clause shall apply only to clients or customers, or prospective clients or customers, that you worked for on an actual or prospective project or assignment during any notice period applicable to you in connection with the termination of your Employment or during the 180 days preceding notice of the termination of your Employment.

IN WITNESS WHEREOF, Morgan Stanley has duly executed and delivered this Award Certificate as of the Date of the Award.

MORGAN STANLEY

/s/

____

[Name]
[Title]

EXHIBIT 21

Subsidiaries of Morgan Stanley*
As of December 31, 2022

* Pursuant to Item 601(b)(21)(ii) of Regulation S-K, the names of certain other subsidiaries of Morgan Stanley are omitted because, considered in the aggregate as a single subsidiary, they would not constitute a "significant subsidiary" as that term is defined in Rule 1-02(w) of Regulation S-X under the Securities Exchange Act of 1934.

Company	Jurisdiction of Incorporation or Formation
Morgan Stanley	United States
Morgan Stanley Capital Management, LLC	United States
Morgan Stanley Domestic Holdings, Inc.	United States
Morgan Stanley & Co. LLC	United States
Morgan Stanley Bank, N.A.	United States
Morgan Stanley Capital Group Inc.	United States
Morgan Stanley Capital Services LLC	United States
Morgan Stanley Investment Management Inc.	United States
Morgan Stanley Private Bank, National Association	United States
Morgan Stanley Smith Barney LLC	United States
Morgan Stanley Finance LLC	United States
Morgan Stanley Holdings LLC	United States
Morgan Stanley International Holdings Inc.	United States
Morgan Stanley Asia Holdings Limited	Cayman Islands
Morgan Stanley Japan Holdings Co., Ltd.	Japan
Morgan Stanley MUFG Securities Co., Ltd.	Japan
Morgan Stanley International Limited	United Kingdom
Morgan Stanley Europe Holding SE	Germany
Morgan Stanley Europe SE	Germany
Morgan Stanley Bank AG	Germany
Morgan Stanley Investments (UK)	United Kingdom
Morgan Stanley & Co. International plc	United Kingdom
Morgan Stanley Investment Management Limited	United Kingdom

EXHIBIT 22

Guarantor and Subsidiary Issuer of Registered Guaranteed Securities

Securities	Guarantor
Morgan Stanley Finance LLC ("MSFL") issues, from time to time, its Series A senior debt securities under the MSFL Senior Debt Indenture dated February 16, 2016 that are each fully and unconditionally guaranteed by Morgan Stanley. Of those issuances, the Global Medium-Term Notes, Series A, Fixed Rate Step-Up Senior Notes Due 2026 and the Global Medium-Term Notes, Series A, Floating Rate Notes Due 2029 are currently listed on the New York Stock Exchange.	Morgan Stanley

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the following Registration Statements (as amended) of our reports dated February 24, 2023, relating to the financial statements of Morgan Stanley and subsidiaries (the “Firm”), and the effectiveness of the Firm’s internal control over financial reporting, appearing in this Annual Report on Form 10-K for the year ended December 31, 2022:

Filed on Form S-3:

Registration Statement No. 333-250103
Registration Statement No. 333-250103-01
Registration Statement No. 333-253728

Filed on Form S-8:

Registration Statement No. 33-63024
Registration Statement No. 33-63026
Registration Statement No. 33-78038
Registration Statement No. 33-79516
Registration Statement No. 33-82240
Registration Statement No. 33-82242
Registration Statement No. 33-82244
Registration Statement No. 333-04212
Registration Statement No. 333-28141
Registration Statement No. 333-28263
Registration Statement No. 333-62869
Registration Statement No. 333-78081
Registration Statement No. 333-95303
Registration Statement No. 333-55972
Registration Statement No. 333-85148

Filed on Form S-8:

Registration Statement No. 333-85150
Registration Statement No. 333-108223
Registration Statement No. 333-142874
Registration Statement No. 333-146954
Registration Statement No. 333-159503
Registration Statement No. 333-159504
Registration Statement No. 333-159505
Registration Statement No. 333-168278
Registration Statement No. 333-172634
Registration Statement No. 333-177454
Registration Statement No. 333-183595
Registration Statement No. 333-188649
Registration Statement No. 333-192448
Registration Statement No. 333-204504
Registration Statement No. 333-211723
Registration Statement No. 333-218377
Registration Statement No. 333-231913
Registration Statement No. 333-256493
Registration Statement No. 333-266612

/s/ Deloitte & Touche LLP
New York, New York
February 24, 2023

EXHIBIT 31.1

Certification

I, James P. Gorman, certify that:

1. I have reviewed this annual report on Form 10-K of Morgan Stanley;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 24, 2023

/s/ JAMES P. GORMAN

James P. Gorman
Chairman of the Board and Chief Executive Officer

EXHIBIT 31.2

Certification

I, Sharon Yeshaya, certify that:

1. I have reviewed this annual report on Form 10-K of Morgan Stanley;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

    a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

    b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: February 24, 2023

/s/ SHARON YESHAYA

Sharon Yeshaya
Executive Vice President and Chief Financial Officer

EXHIBIT 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Morgan Stanley (the "Firm") on Form 10-K for the year ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Sharon Yeshaya, Executive Vice President and Chief Financial Officer of the Firm, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Firm.

/s/ SHARON YESHAYA

Sharon Yeshaya
Executive Vice President and
Chief Financial Officer

Dated: February 24, 2023

EXHIBIT 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Morgan Stanley (the "Firm") on Form 10-K for the year ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, James P. Gorman, Chairman of the Board and Chief Executive Officer of the Firm, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Firm.

/s/ JAMES P. GORMAN
James P. Gorman
Chairman of the Board and
Chief Executive Officer

Dated: February 24, 2023