

OCTAGON INVESTMENT PARTNERS XXII, LTD. OCTAGON INVESTMENT PARTNERS XXII, LLC

NOTICE OF PROPOSED SUPPLEMENTAL INDENTURE

Date of Notice: November 25, 2016

NOTE: THIS NOTICE CONTAINS IMPORTANT INFORMATION THAT IS OF INTEREST TO THE REGISTERED AND BENEFICIAL OWNERS OF THE SUBJECT NOTES. IF APPLICABLE, ALL DEPOSITORIES, CUSTODIANS, AND OTHER INTERMEDIARIES RECEIVING THIS NOTICE ARE REQUESTED TO EXPEDITE RE-TRANSMITTAL TO BENEFICIAL OWNERS OF THE NOTES IN A TIMELY MANNER.

To: The Holders of the Notes as described on the attached <u>Schedule A</u> and to those Additional Parties listed on <u>Schedule I</u> hereto:

Reference is hereby made to that certain Indenture dated as of November 25, 2014 (as supplemented, amended or modified from time to time, the "Indenture"), among OCTAGON INVESTMENT PARTNERS XXII, LTD., as Issuer (the "Issuer"), OCTAGON INVESTMENT PARTNERS XXII, LLC, as Co-Issuer (the "Co-Issuer", and together with the Issuer, the "Co-Issuers") and U.S. BANK NATIONAL ASSOCIATION, as Trustee (in such capacity, the "Trustee"). Capitalized terms used herein and not otherwise defined herein shall have the meanings assigned to such terms in the Indenture.

Pursuant to Section 8.3 of the Indenture, the Trustee hereby provides notice (the "Notice") of a proposed Supplemental Indenture (the "Supplemental Indenture"). A copy of the proposed Supplemental Indenture is attached hereto as Exhibit A. The Indenture provides that with respect to any proposed supplemental indenture pursuant to Section 8.1(xiv) if the Trustee and the Issuer are notified (within 20 days after notice by the Issuer to the Holders of a proposed supplemental indenture) by the Holders of a Majority of the Aggregate Outstanding Amount of the Controlling Class that such Holders reasonably believe the interests of the Holders of the Controlling Class will be materially and adversely affected by such proposed modification or amendment, the Issuer and the Trustee shall not enter into such proposed supplemental indenture.

The Supplemental Indenture shall not become effective until all conditions precedent set forth in the Indenture have been satisfied or waived.

THE TRUSTEE MAKES NO STATEMENT AS TO THE RIGHTS OF THE HOLDERS OF THE NOTES IN RESPECT OF THE SUPPLEMENTAL INDENTURE, ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE CONTENTS OR SUFFICIENCY OF THE SUPPLEMENTAL INDENTURE AND MAKES NO

RECOMMENDATIONS AS TO ANY ACTION TO BE TAKEN WITH RESPECT TO THE SUPPLEMENTAL INDENTURE. HOLDERS ARE ADVISED TO CONSULT THEIR OWN LEGAL OR INVESTMENT ADVISOR.

This Notice is being sent to Holders of Notes by U.S. Bank National Association in its capacity as Trustee at the request of the Issuer. Questions may be directed to the Trustee by contacting Mark Sullivan at telephone (617) 603-6487 or by e-mail at mark.sullivan@usbank.com.

The CUSIP, ISIN and Common Code numbers appearing in this notice are included solely for the convenience of the Holders. The Trustee is not responsible for the selection or use of the CUSIP, ISIN or Common Code numbers, or for the accuracy or correctness of CUSIP, ISIN or Common Code numbers printed on the Notes or as indicated in this notice. Recipients of this notice are cautioned that this notice is not evidence that the Trustee will recognize the recipient as a Holder. Under the Indenture, the Trustee is required only to recognize and treat the person in whose name a Security is registered on the registration books maintained by the Trustee as a Holder.

U.S. BANK NATIONAL ASSOCIATION, as Trustee

Schedule A CUSIP

	Rule 144a (Global)	Reg S	Accredited Investor
	CUSIP*	CUSIP*	CUSIP*
	ISIN*	ISIN*	ISIN*
Class X Notes	67572Y AA0	G6712J AA5	67572Y AB8
	US67572YAA01	USG6712JAA54	US67572YAB83
Class A Notes	67572Y AC6	G6712J AB3	67572Y AD4
	US67572YAC66	USG6712JAB38	US67572YAD40
Class B-1 Notes	67572Y AE2	G6712J AC1	67572Y AF9
	US67572YAE23	USG6712JAC11	US67572YAF97
Class B-2 Notes	67572Y AG7	G6712J AD9	67572Y AH5
	US67572YAG70	USG6712JAD93	US67572YAH53
Class C-1 Notes	67572Y AJ1	G6712J AE7	67572Y AK8
	US67572YAJ10	USG6712JAE76	US67572YAK82
Class C-2 Notes	67572Y AQ5	G6712J AH0	67572Y AR3
	US67572YAQ52	USG6712JAH08	US67572YAR36
Class C-3 Notes	67572Y AS1	G6712J AJ6	67572Y AT9
	US67572YAS19	USG6712JAJ63	US67572YAT91
Class D-1 Notes	67572Y AL6	G6712J AF4	67572Y AM4
	US67572YAL65	USG6712JAF42	US67572YAM49
Class D-2 Notes	67572Y AU6	G6712J AK3	67572Y AV4
	US67572YAU64	USG6712JAK37	US67572YAV48
Class E-1 Notes	67574Q AA5	G6713T AA2	67572Q AB3
	US67574QAA58	USG6713TAA28	US67572QAB32
Class E-2 Notes	67574Q AC1	G6713T AB0	67572Q AD9
	US67574QAC15	USG6713TAB01	US67572QAD97
Class F Notes	67574Q AE7	G6713T AC8	67572Q AF4
	US67574QAE70	USG6713TAC83	US67572QAF46
Subordinated Notes	67574Q AG2	G6713T AD6	67572Q AH0
	US67574QAG29	USG6713TAD66	US67572QAH02

SCHEDULE I

Additional Parties

<u>Issuer</u>:

 $Octagon\ Investment\ Partners\ XXII,\ Ltd.$

c/o MaplesFS Limited

P.O. Box 1093

Boundary Hall, Cricket Square Grand Cayman, KY-1102

Cayman Islands

Attention: The Directors

Telephone no.: _1 (345) 945-7099 Facsimile no.: + (345) 945-7099 Email: cayman@maplesfs.com

Co-Issuer:

Octagon Investment Partners XXII, LLC c/o Maples Fiduciary Services (Delaware) Inc.,

4001 Kennett Pike, Suite 302 Wilmington, Delaware 19807 Attention: Edward Truitt

Telephone no.: +1 (302) 338-9130 Email: edward.truitt@maplefs.com

Collateral Manager:

Octagon Credit Investors, LLC 250 Park Avenue - 15th Floor

New York, NY 10177

Attention: Lauren Basmadjian Telephone no.: (212) 400-8423 Facsimile no.: (917) 464-8737

Irish Stock Exchange

The Irish Stock Exchange plc Company Announcement Office 28 Anglesea Street Dublin 2, Ireland Electronic copy to be uploaded to website provided by ISE

Irish Listing Agent

Irish Listing Agent Maples and Calder 75 St. Stephen's Green Dublin 2. Ireland

Facsimile no.: +353 1 619 2001

E-mail: dublindebtlisting@maplesandcalder.com

Rating Agencies

Moody's Investors Service, Inc.
7 World Trade Center
250 Greenwich Street
New York, New York 10007
Attention: CBO/CLO Monitoring
E-mail: cdomonitoring@moodys.com

Standard & Poor's

55 Water Street, 41st Floor

New York, New York 10041-0003

Attention: Asset Backed-CBO/CLO Surveillance

With an electronic copy to CDO_surveillance@sandp.com Facsimile no.: (212) 438-2655

DTC, Euroclear and Clearstream (if applicable):

lensnotices@dtcc.com voluntaryreorgannouncements@dtcc.com drit@euroclear.com ca_mandatory.events@clearstream.com

EXHIBIT A

Proposed Supplemental Indenture

SUPPLEMENTAL INDENTURE

to the

INDENTURE dated as of November 25, 2014

by and among

OCTAGON INVESTMENT PARTNERS XXII, LTD., as Issuer,

OCTAGON INVESTMENT PARTNERS XXII, LLC, as Co-Issuer,

and

U.S. BANK NATIONAL ASSOCIATION, as Trustee

This SUPPLEMENTAL INDENTURE dated as of December [__], 2016 (this "Supplemental Indenture") to the Indenture dated as of November 25, 2014 (the "Indenture") is entered into by and among Octagon Investment Partners XXII, Ltd., an exempted company incorporated with limited liability under the laws of the Cayman Islands (the "Issuer"), Octagon Investment Partners XXII, LLC, a limited liability company organized under the laws of the State of Delaware (the "Co-Issuer" and, together with the Issuer, the "Co-Issuers"), and U.S. Bank National Association, a limited purpose national banking association with trust powers, as trustee under the Indenture (together with its successors in such capacity, the "Trustee"). Capitalized terms used but not otherwise defined herein shall have the respective meanings set forth in the Indenture.

PRELIMINARY STATEMENT

WHEREAS, the Co-Issuers wish to amend the Indenture pursuant to Section 8.1(xiv); and

WHEREAS, the conditions set forth for entry into a supplemental indenture pursuant to Sections 8.1 and 8.3 of the Indenture have been satisfied;

NOW, THEREFORE, in consideration of the mutual agreements herein set forth, the parties agree as follows:

1. <u>Amendments</u>. Upon the effectiveness of this Supplemental Indenture, the following amendments are made to the Indenture pursuant to Section 8.1(xiv) of the Indenture:

- (i) The list of Schedules and Exhibits set forth in the Table of Contents is amended by (A) restating the title of Schedule 2 as "S&P Classifications" and (B) inserting a new Schedule 6 titled "S&P Non-Model Version CDO Monitor Definitions."
- (ii) Schedule 2 to the Indenture is amended and restated in its entirety as set forth in Annex A hereto.
- (iii) The Indenture is amended by inserting Annex B hereto after Schedule 5 as Schedule 6.
- (iv) The definition of "S&P CDO Monitor Test" set forth in Section 1.1 of the Indenture is amended and restated in its entirety as follows:

""S&P CDO Monitor Test": A test that will be satisfied on any date of determination on or after the Effective Date if, after giving effect to the sale of a Collateral Obligation or the purchase of a Collateral Obligation, the Class Default Differential of the Proposed Portfolio is positive. The S&P CDO Monitor Test will be considered to be improved if the Class Default Differential of the Proposed Portfolio is greater than the Class Default Differential of the Current Portfolio. If so elected by the Collateral Manager, upon at least 5 Business Days' prior written notice to S&P, the S&P CDO Monitor Test and definitions applicable thereto, shall instead be as set forth in Schedule 6 hereto henceforth (such date the "S&P CDO Monitor Formula Election"). An S&P CDO Monitor Formula Election shall only be made once. The S&P CDO Monitor Test will no longer be applicable on any date on which the Class X Notes and the Class A Notes are no longer outstanding.""

2. Governing Law.

THIS SUPPLEMENTAL INDENTURE AND EACH NOTE AND ANY CLAIM, CONTROVERSY OR DISPUTE ARISING UNDER OR RELATED TO THIS AGREEMENT, THE RELATIONSHIP OF THE PARTIES, AND/OR THE INTERPRETATION AND ENFORCEMENT OF THE RIGHTS AND DUTIES OF THE PARTIES SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED IN ALL RESPECTS (WHETHER IN CONTRACT OR IN TORT) BY THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO CONFLICT OF LAWS.

3. Execution in Counterparts.

This Supplemental Indenture may be executed in any number of counterparts, each of which so executed shall be deemed to be an original, but all such counterparts shall together constitute but one and the same instrument. Delivery of an executed counterpart of this Supplemental Indenture by electronic means (including email or telecopy) will be effective as delivery of a manually executed counterpart of this Supplemental Indenture.

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4. <u>Concerning the Trustee</u>.

The recitals contained in this Supplemental Indenture shall be taken as the statements of the Co-Issuers, and the Trustee assumes no responsibility for their correctness. Except as provided in the Indenture, the Trustee shall not be responsible or accountable in any way whatsoever for or with respect to the validity, execution or sufficiency of this Supplemental Indenture and makes no representation with respect thereto. In entering into this Supplemental Indenture, the Trustee shall be entitled to the benefit of every provision of the Indenture relating to the conduct of or affecting the liability of or affording protection to the Trustee.

5. No Other Changes.

Except as provided herein, the Indenture shall remain unchanged and in full force and effect, and each reference to the Indenture and words of similar import in the Indenture, as amended hereby, shall be a reference to the Indenture as amended hereby and as the same may be further amended, supplemented and otherwise modified and in effect from time to time. This Supplemental Indenture may be used to create a conformed amended and restated Indenture for the convenience of administration by the parties hereto.

6. <u>Execution, Delivery and Validity.</u>

Each of the Co-Issuers represents and warrants to the Trustee that this Supplemental Indenture has been duly and validly executed and delivered by it and constitutes its legal, valid and binding obligation, enforceable against it in accordance with its terms.

7. <u>Binding Effect</u>.

This Supplemental Indenture shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

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IN WITNESS WHEREOF, the parties hereto have caused this Supplemental Indenture to be duly executed and delivered by their respective proper and duly authorized officers as of the day and year first above written.

OCTAGON INVESTMENT PARTNERS XXII, LTD. as Issuer
Ву:
Name: Title:
OCTAGON INVESTMENT PARTNERS XXII, LLC as Co-Issuer
Ву:
Name: Title:
U.S. BANK NATIONAL ASSOCIATION as Trustee
By:
Name: Title:

ANNEX A SCHEDULE 2

S&P CLASSIFICATIONS

S&P Industry Classifications

Asset Type Code	Asset Type Description	
1020000	Energy Equipment & Services	
1030000	Oil, Gas & Consumable Fuels	
2020000	Chemicals	
2030000	Construction Materials	
2040000	Containers & Packaging	
2050000	Metals & Mining	
2060000	Paper & Forest Products	
3020000	Aerospace & Defense	
3030000	Building Products	
3040000	Construction & Engineering	
3050000	Electrical Equipment	
3060000	Industrial Conglomerates	
3070000	Machinery	
3080000	Trading Companies & Distributors	
3110000	Commercial Services & Supplies	
9612010	Professional Services	
3210000	Air Freight & Logistics	
3220000	Airlines	
3230000	Marine	
3240000	Road & Rail	
3250000	Transportation Infrastructure	
4011000	Auto Components	
4020000	Automobiles	
4110000	Household Durables	
4120000	Leisure Products	
4130000	Textiles, Apparel & Luxury Goods	

4210000	Hotels, Restaurants & Leisure			
9551701	Diversified Consumer Services			
4310000	Media			
4410000	Distributors			
4420000	Internet and Catalog Retail			
4430000	Multiline Retail			
4440000	Specialty Retail			
5020000	Food & Staples Retailing			
5110000	Beverages			
5120000	Food Products			
5130000	Tobacco			
5210000	Household Products			
5220000	Personal Products			
6020000	Health Care Equipment & Supplies			
6030000	Health Care Providers & Services			
9551729	Health Care Technology			
6110000	Biotechnology			
6120000	Pharmaceuticals			
9551727	Life Sciences Tools & Services			
7011000	Banks			
7020000	Thrifts & Mortgage Finance			
7110000	Diversified Financial Services			
7120000	Consumer Finance			
7130000	Capital Markets			
7210000	Insurance			
7311000	Real Estate Investment Trusts (REITs)			
7310000	Real Estate Management & Development			
8020000	Internet Software & Services			
8030000	IT Services			
8040000	Software			
8110000	Communications Equipment			
8120000	Technology Hardware, Storage & Peripherals			
8130000	Electronic Equipment, Instruments & Components			
8210000	Semiconductors & Semiconductor Equipment			

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9020000	Diversified Telecommunication Services		
9030000	Wireless Telecommunication Services		
9520000	Electric Utilities		
9530000	Gas Utilities		
9540000	Multi-Utilities		
9550000	Water Utilities		
9551702	Independent Power and Renewable Electricity Producers		
PF1	Project finance: industrial equipment		
PF2	Project finance: leisure and gaming		
PF3	Project finance: natural resources and mining		
PF4	Project finance: oil and gas		
PF5	Project finance: power		
PF6	Project finance: public finance and real estate		
PF7	Project finance: telecommunications		
PF8	Project finance: transport		
IPF	International project finance		

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ANNEX B

S&P Non-Model Version CDO Monitor Definitions

If so elected by the Collateral Manager by written notice to the Issuer, the Collateral Administrator, the Trustee and S&P, the S&P CDO Monitor Test shall be defined as follows:

The "S&P CDO Monitor Test" will be satisfied on any date of determination on or after the Effective Date and during the Reinvestment Period following receipt by the Collateral Manager or the Collateral Administrator from S&P of the S&P CDO Monitor Input File to the S&P CDO Monitor if, after giving effect to the purchase of any additional Collateral Obligation, the S&P CDO Monitor Adjusted BDR is equal to or greater than the S&P CDO Monitor SDR. The S&P CDO Monitor Test shall only be applicable to the junior-most Class of Notes rated "AAA".

As used for purposes of the S&P CDO Monitor Test, the following terms shall have the meanings set forth below:

"S&P CDO Monitor Adjusted BDR" means the threshold value for the S&P CDO Monitor Test, calculated as a percentage by adjusting the S&P CDO Monitor BDR for changes in the Principal Balance of the Collateral Obligations relative to the Reinvestment Target Par Balance as follows:

S&P CDO Monitor BDR * (OP/NP) + (NP - OP)/NP * (1 - Weighted Average S&P Recovery Rate), where OP = Aggregate Ramp-Up Par Amount; and NP = the sum of the Aggregate Principal Balances of the Collateral Obligations with an S&P Rating of "CCC-" or higher, Principal Proceeds, and the sum of the lower of S&P Recovery Amount or the Market Value of each obligation with an S&P Rating below "CCC-".

"S&P CDO Monitor BDR" means the value calculated using the formula provided in the S&P CDO Monitor Input File.

"S&P CDO Monitor Input File" means a file containing the formula relating to the Issuer's portfolio used to calculate the S&P CDO Monitor BDR, which formula is: S&P CDO Monitor BDR = C0 + (C1 * Weighted Average Floating Spread) + (C2 * Weighted Average S&P Recovery Rate), where <math>C0 = 0.095850, C1 = 3.855066 and C2 = 0.967225. C0, C1 and C2 will not change unless S&P provides an updated S&P CDO Monitor Input File at the request of the Collateral Manager following the Closing Date.

"S&P CDO Monitor SDR" means the percentage derived from the following equation: 0.329915 + (1.210322 * EPDR) - (0.586627 * DRD) + (2.538684 /ODM) + (0.216729 / IDM) + (0.0575539 / RDM) - (0.0136662 * WAL), where EPDR is the S&P Expected Portfolio Default Rate; DRD is the S&P Default Rate Dispersion; ODM is the S&P Obligor Diversity Measure; IDM is the S&P Industry Diversity Measure; RDM is the S&P Regional Diversity Measure; and WAL is the S&P Weighted Average Life.

- "**S&P Default Rate**" means, with respect to all Collateral Obligations with an S&P Rating of "CCC-" or higher, the default rate determined in accordance with Table 1 below using such Collateral Obligation's S&P Rating and the number of years to maturity (determined using linear interpolation if the number of years to maturity is not an integer).
- "S&P Default Rate Dispersion" means, with respect to all Collateral Obligations with an S&P Rating of "CCC-" or higher, (A) the sum of the product of (i) the Principal Balance of each such Collateral Obligation and (ii) the absolute value of (x) the S&P Default Rate *minus* (y) the S&P Expected Portfolio Default Rate *divided by* (B) the Aggregate Principal Balance for all such Collateral Obligations.
- "S&P Effective Date Adjustments" means, in connection with determining whether the S&P CDO Monitor Test is satisfied in connection with the Effective Date, if an S&P CDO Monitor Formula Election has been made, in calculating the S&P CDO Adjusted BDR, the Collateral Principal Amount will exclude the Effective Date Interest Designation Amount.
- "**S&P Expected Portfolio Default Rate**" means, with respect to all Collateral Obligations with an S&P Rating of "CCC-" or higher, (i) the sum of the product of (x) the Principal Balance of each such Collateral Obligation and (y) the S&P Default Rate *divided by* (ii) the Aggregate Principal Balance for all such Collateral Obligations.
- "S&P Industry Diversity Measure" means a measure calculated by determining the Aggregate Principal Balance of the Collateral Obligations (with an S&P Rating of "CCC-" or higher) within each S&P Industry Classification in the portfolio, then dividing each of these amounts by the Aggregate Principal Balance of the Collateral Obligations (with an S&P Rating of "CCC-" or higher) from all the S&P Industry Classifications in the portfolio, squaring the result for each industry, then taking the reciprocal of the sum of these squares.
- "S&P Obligor Diversity Measure" means a measure calculated by determining the Aggregate Principal Balance of the Collateral Obligations (with an S&P Rating of "CCC-" or higher) from each obligor and its affiliates, then dividing each such Aggregate Principal Balance by the Aggregate Principal Balance of Collateral Obligations (with an S&P Rating of "CCC-" or higher) from all the obligors in the portfolio, then squaring the result for each obligor, then taking the reciprocal of the sum of these squares.
- "S&P Regional Diversity Measure" means a measure calculated by determining the Aggregate Principal Balance of the Collateral Obligations (with an S&P Rating of "CCC-" or higher) within each S&P region set forth in Table 2 below, then dividing each of these amounts by the Aggregate Principal Balance of the Collateral Obligations (with an S&P Rating of "CCC-" or higher) from all S&P regions in the portfolio, squaring the result for each region, then taking the reciprocal of the sum of these squares.
- "S&P Weighted Average Life" means, on any date of determination, a number calculated by determining the number of years between the current date and the maturity date of each Collateral Obligation (with an S&P Rating of "CCC-" or higher), multiplying each Collateral Obligation's Principal Balance by its number of years, summing the results of all

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Collateral Obligations in the portfolio, and dividing such amount by the Aggregate Principal Balance of all Collateral Obligations (with an S&P Rating of "CCC-" or higher).

Table 1

Name		Rating									
0 0											
1 0.003249 0.008324 0.017659 0.049443 0.100435 0.198336 0.305284 0.003699 0.61619 0.524294 2 0.015699 0.036996 0.073622 0.139938 0.257400 0.452472 0.667329 0.892889 1.091719 1.445989 3 0.041844 0.091325 0.172278 0.276841 0.474538 0.770505 1.100045 1.484175 1.895696 2.702054 4 0.084784 0.176281 0.317735 0.15890 1.513749 0.708173 1.102407 1.621846 2.213969 3.000396 3.994693 5.969443 6 0.240402 0.455938 0.763415 1.009969 1.517930 2.162163 2.993924 3.924151 5.258484 7.867654 7 0.360599 0.658408 1.069266 1.372767 2.002861 2.780489 3.682872 4.950544 6.639097 9.877442 8 0.513925 0.906933 1.433135 1.798206 2.557255 3.475934 4.547804 </th <th></th>											
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4 0.084784 0.176281 0.317753 0.464897 0.755269 1.158808 1.613532 2.186032 2.867799 4.229668 5 0.149746 0.296441 0.513749 0.708173 1.102407 1.621846 2.213969 3.000396 3.994693 5.969443 6 0.240402 0.455938 0.763415 1.009969 1.517930 2.162163 2.903924 3.924151 5.258484 7.867654 7 0.360599 0.658408 1.069266 1.372767 2.002861 2.780489 3.682872 4.950544 6.639077 9.877442 8 0.513925 0.906953 1.433135 1.798206 2.557255 3.475934 4.547804 6.070420 8.1161014 11.959164 9 0.703660 1.204112 1.856168 2.287090 3.180245 4.246223 5.493831 7.273226 9.669463 14.01610 10 0.932722 1.551859 2.338835 2.839430 3.870134 5.0879689 7.603506 9.822975 12.9	2	0.015699	0.036996	0.073622	0.139938	0.257400	0.452472	0.667329	0.892889	1.091719	1.445989
5 0.149746 0.296441 0.513749 0.708173 1.102407 1.621846 2.213969 3.000396 3.994693 5.969443 6 0.240402 0.455938 0.763415 1.009969 1.517930 2.162163 2.903924 3.924151 5.258484 7.867654 7 0.360599 0.658408 1.069266 1.372767 2.002861 2.780489 3.682872 4.950544 6.639097 9.877442 8 0.513925 0.90693 1.433135 1.798206 2.557255 3.475934 4.547804 6.070420 8.116014 11.99164 9 0.703660 1.204112 1.856168 2.287090 3.180245 4.246223 5.493331 7.273226 9.669463 14.080160 10 0.932722 1.551859 2.338835 2.839430 3.870134 5.087692 6.514747 8.547804 11.281152 16.214169 11 1.203636 1.951593 2.889667 3.454496 4.624506 5.996889 7.603506 9.882975 12.9	3	0.041484	0.091325	0.172278	0.276841	0.474538	0.770505	1.100045	1.484175	1.895696	2.702054
6 0.240402 0.455938 0.763415 1.009969 1.517930 2.162163 2.903924 3.924151 5.258484 7.867654 7 0.360599 0.658408 1.069266 1.372767 2.002861 2.780489 3.682872 4.950544 6.639097 9.877442 8 0.513925 0.906953 1.433135 1.798206 2.557255 3.475934 4.547804 6.070420 8.116014 11.959164 9 0.703660 1.204112 1.856168 2.287090 3.180245 4.246223 5.493831 7.273226 9.669463 14.080160 10 0.932722 1.551859 2.338835 2.839430 3.870134 5.08762 6.514747 8.547804 11.281152 16.214169 11 1.203636 1.951593 2.889677 3.454496 4.624506 5.996889 7.603506 9.882975 12.94676 18.340556 12 1.518511 2.404163 3.481806 4.360866 6.314188 7.996356 9.954495 12.69626 1	4	0.084784	0.176281	0.317753	0.464897	0.755269	1.158808	1.613532	2.186032	2.867799	4.229668
7 0.360599 0.658408 1.069266 1.372767 2.002861 2.780489 3.682872 4.950544 6.639097 9.877442 8 0.513925 0.906953 1.433135 1.798206 2.557255 3.475934 4.547804 6.070420 8.116014 11.959164 9 0.703660 1.204112 1.856168 2.287090 3.180245 4.246223 5.493831 7.273226 9.669463 14.080160 10 0.932722 1.551859 2.338835 2.839430 3.870134 5.087962 6.514747 8.547804 11.281152 16.214169 11 1.203636 1.951593 2.880967 3.454496 4.624506 5.996889 7.603506 9.882975 12.934676 18.340556 12 1.518511 2.404163 3.481806 4.130896 5.440351 6.968119 8.752625 11.267955 14.615674 20.443492 13 1.879017 2.908885 4.140061 4.866600 6.31488 7.996356 9.954495 12.692626	5	0.149746	0.296441	0.513749	0.708173	1.102407	1.621846	2.213969	3.000396	3.994693	5.969443
8 0.513925 0.906953 1.433135 1.798206 2.557255 3.475934 4.547804 6.070420 8.116014 11.959164 9 0.703660 1.204112 1.856168 2.287090 3.180245 4.246223 5.493831 7.273226 9.669463 14.080160 10 0.932722 1.551859 2.338835 2.839430 3.870134 5.087962 6.514747 8.547804 11.281152 16.214169 11 1.203636 1.951593 2.880967 3.454496 4.624506 5.996889 7.603506 9.882975 12.934676 18.340556 12 1.518511 2.404163 3.481806 4.130896 5.440351 6.968119 8.752625 11.2692626 16.311827 22.31146 14 2.286393 3.468577 4.853976 5.659322 7.242183 9.076083 11.201627 14.147698 18.012750 24.53495 15 2.741441 4.079595 5.621395 6.506018 8.220258 10.201710 12.486816 15.624793	6	0.240402	0.455938	0.763415	1.009969	1.517930	2.162163	2.903924	3.924151	5.258484	7.867654
9 0.703660 1.204112 1.856168 2.287090 3.180245 4.246223 5.493831 7.273226 9.669463 14.080160 10 0.932722 1.551859 2.338835 2.839430 3.870134 5.087962 6.514747 8.547804 11.281152 16.214169 11 1.203636 1.951593 2.880967 3.454496 4.624506 5.996889 7.603506 9.882975 12.934676 18.340556 12 1.518511 2.404163 3.481806 4.130896 5.440351 6.968119 8.752625 11.267955 14.615674 20.443492 13 1.879017 2.909885 4.140061 4.866660 6.314188 7.996356 9.954495 12.692626 16.311827 22.511146 14 2.286393 3.468577 4.853976 5.659322 7.242183 9.076083 11.201627 14.147698 18.012750 24.534955 15 2.741441 4.079595 5.621395 6.506018 8.220258 10.201710 12.486816 15.624793 </td <td>7</td> <td>0.360599</td> <td>0.658408</td> <td>1.069266</td> <td>1.372767</td> <td>2.002861</td> <td>2.780489</td> <td>3.682872</td> <td>4.950544</td> <td>6.639097</td> <td>9.877442</td>	7	0.360599	0.658408	1.069266	1.372767	2.002861	2.780489	3.682872	4.950544	6.639097	9.877442
10 0.932722 1.551859 2.338835 2.839430 3.870134 5.087962 6.514747 8.547804 11.281152 16.214169 11 1.203636 1.951593 2.880967 3.454496 4.624506 5.996889 7.603506 9.882975 12.934676 18.340556 12 1.518511 2.404163 3.481806 4.130896 5.440351 6.968119 8.752625 11.267955 14.615674 20.443492 13 1.879017 2.909885 4.140061 4.866660 6.314188 7.996356 9.954495 12.692626 16.311827 22.511146 14 2.286393 3.468577 4.853976 5.659322 7.242183 9.076083 11.201627 14.147698 18.012750 24.534955 15 2.741441 4.079595 5.621395 6.506018 8.220258 10.201710 12.486816 15.624793 19.709826 26.508977 16 3.244545 4.741882 6.439830 7.403564 9.244188 11.367700 13.803266 17.116	8	0.513925	0.906953	1.433135	1.798206	2.557255	3.475934	4.547804	6.070420	8.116014	11.959164
11 1.203636 1.951593 2.880967 3.454496 4.624506 5.996889 7.603506 9.882975 12.934676 18,340556 12 1.518511 2.404163 3.481806 4.130896 5.440351 6.968119 8.752625 11.267955 14.615674 20,443492 13 1.879017 2.909885 4.140061 4.866660 6.314188 7.996356 9.954495 12.692626 16.311827 22.511146 14 2.286393 3.468577 4.853976 5.659322 7.242183 9.076083 11.201627 14.147698 18.012750 24.534955 15 2.741441 4.079595 5.621395 6.506018 8.220258 10.201710 12.486816 15.624793 19.709826 26.508977 16 3.244545 4.741882 6.439830 7.403564 9.244188 11.367700 13.803266 17.116461 21.396011 28.429339 17 3.795687 5.454010 7.306523 8.348542 10.309683 12.568668 15.144662 18	9	0.703660	1.204112	1.856168	2.287090	3.180245	4.246223	5.493831	7.273226	9.669463	14.080160
12 1.518511 2.404163 3.481806 4.130896 5.440351 6.968119 8.752625 11.267955 14.615674 20.443492 13 1.879017 2.909885 4.140061 4.866660 6.314188 7.996356 9.954495 12.69262 16.311827 22.511146 14 2.286393 3.468577 4.853976 5.659322 7.242183 9.076083 11.201627 14.147698 18.012750 24.534955 15 2.741441 4.079595 5.621395 6.506018 8.220258 10.201710 12.486816 15.624793 19.709826 26.508977 16 3.244545 4.741882 6.439830 7.403564 9.244188 11.367700 13.803266 17.116461 21.396011 28.429339 17 3.795687 5.454010 7.306523 8.348542 10.309683 12.568668 15.144662 18.616162 23.065363 30.293780 18 4.394473 6.214227 8.218512 9.337373 11.412464 13.799448 16.505206 <td< td=""><td>10</td><td>0.932722</td><td>1.551859</td><td>2.338835</td><td>2.839430</td><td>3.870134</td><td>5.087962</td><td>6.514747</td><td>8.547804</td><td>11.281152</td><td>16.214169</td></td<>	10	0.932722	1.551859	2.338835	2.839430	3.870134	5.087962	6.514747	8.547804	11.281152	16.214169
13 1.879017 2.909885 4.140061 4.866660 6.314188 7.996356 9.954495 12.692626 16.311827 22.511146 14 2.286393 3.468577 4.853976 5.659322 7.242183 9.076083 11.201627 14.147698 18.012750 24.534955 15 2.741441 4.079595 5.621395 6.506018 8.220258 10.201710 12.486816 15.624793 19.709826 26.508977 16 3.244545 4.741882 6.439830 7.403564 9.244188 11.367700 13.803266 17.116461 21.396011 28.429339 17 3.795687 5.454010 7.306523 8.348542 10.309683 12.568668 15.144662 18.616162 23.065636 30.293780 18 4.394473 6.214227 8.218512 9.337373 11.412464 13.799448 16.505206 20.118217 24.714212 32.101269 19 5.040161 7.020506 9.172684 10.366381 12.548315 15.055145 17.879633	11	1.203636	1.951593	2.880967	3.454496	4.624506	5.996889	7.603506	9.882975	12.934676	18.340556
14 2.286393 3.468577 4.853976 5.659322 7.242183 9.076083 11.201627 14.147698 18.012750 24.534955 15 2.741441 4.079595 5.621395 6.506018 8.220258 10.201710 12.486816 15.624793 19.709826 26.508977 16 3.244545 4.741882 6.439830 7.403564 9.244188 11.367700 13.803266 17.116461 21.396011 28.429339 17 3.795687 5.454010 7.306523 8.348542 10.309683 12.568668 15.144662 18.616162 23.065636 30.293780 18 4.394473 6.214227 8.218512 9.337373 11.412464 13.799448 16.505206 20.118217 24.714212 32.101269 19 5.040161 7.020506 9.172684 10.366381 12.548315 15.055145 17.879633 21.617740 26.338248 33.851709 20 5.731690 7.870595 10.165829 11.431855 13.713133 16.31168 19.263208	12	1.518511	2.404163	3.481806	4.130896	5.440351	6.968119	8.752625	11.267955	14.615674	20.443492
15 2.741441 4.079595 5.621395 6.506018 8.220258 10.201710 12.486816 15.624793 19.709826 26.508977 16 3.244545 4.741882 6.439830 7.403564 9.244188 11.367700 13.803266 17.116461 21.396011 28.429339 17 3.795687 5.454010 7.306523 8.348542 10.309683 12.568668 15.144662 18.616162 23.065636 30.293780 18 4.394473 6.214227 8.218512 9.337373 11.412464 13.799448 16.505206 20.118217 24.714212 32.101269 19 5.040161 7.020506 9.172684 10.366381 12.548315 15.055145 17.879633 21.617740 26.338248 33.851709 20 5.731690 7.870595 10.165829 11.431855 13.713133 16.331168 19.263208 23.110574 27.935091 35.545692 21 6.467720 8.762054 11.194685 12.530097 14.902967 17.623250 20.651699 <td>13</td> <td>1.879017</td> <td>2.909885</td> <td>4.140061</td> <td>4.866660</td> <td>6.314188</td> <td>7.996356</td> <td>9.954495</td> <td>12.692626</td> <td>16.311827</td> <td>22.511146</td>	13	1.879017	2.909885	4.140061	4.866660	6.314188	7.996356	9.954495	12.692626	16.311827	22.511146
16 3.244545 4.741882 6.439830 7.403564 9.244188 11.367700 13.803266 17.116461 21.396011 28.429339 17 3.795687 5.454010 7.306523 8.348542 10.309683 12.568668 15.144662 18.616162 23.065636 30.293780 18 4.394473 6.214227 8.218512 9.337373 11.412464 13.799448 16.505206 20.118217 24.714212 32.101269 19 5.040161 7.020506 9.172684 10.366381 12.548315 15.055145 17.879633 21.617740 26.338248 33.851709 20 5.731690 7.870595 10.165829 11.431855 13.713133 16.331168 19.263208 23.110574 27.935091 35.545692 21 6.467720 8.762054 11.194685 12.530097 14.902967 17.623250 20.651699 24.593206 29.502784 37.184306 22 7.246658 9.692304 12.255978 13.657463 16.114039 18.927451 22.041357	14	2.286393	3.468577	4.853976	5.659322	7.242183	9.076083	11.201627	14.147698	18.012750	24.534955
17 3.795687 5.454010 7.306523 8.348542 10.309683 12.568668 15.144662 18.616162 23.065636 30.293780 18 4.394473 6.214227 8.218512 9.337373 11.412464 13.799448 16.505206 20.118217 24.714212 32.101269 19 5.040161 7.020506 9.172684 10.366381 12.548315 15.055145 17.879633 21.617740 26.338248 33.851709 20 5.731690 7.870595 10.165829 11.431855 13.713133 16.331168 19.263208 23.110574 27.935091 35.545692 21 6.467720 8.762054 11.194685 12.530097 14.902967 17.623250 20.651699 24.593206 29.502784 37.184306 22 7.246658 9.692304 12.255978 13.657463 16.114039 18.927451 22.041357 26.062700 31.039941 38.768990 23 8.066698 10.658664 13.346459 14.810401 17.342769 20.240163 23.42	15	2.741441	4.079595	5.621395	6.506018	8.220258	10.201710	12.486816	15.624793	19.709826	26.508977
18 4.394473 6.214227 8.218512 9.337373 11.412464 13.799448 16.505206 20.118217 24.714212 32.101269 19 5.040161 7.020506 9.172684 10.366381 12.548315 15.055145 17.879633 21.617740 26.338248 33.851709 20 5.731690 7.870595 10.165829 11.431855 13.713133 16.331168 19.263208 23.110574 27.935091 35.545692 21 6.467720 8.762054 11.194685 12.530097 14.902967 17.623250 20.651699 24.593206 29.502784 37.184306 22 7.246658 9.692304 12.255978 13.657463 16.114039 18.927451 22.041357 26.062700 31.039941 38.768990 23 8.066698 10.658664 13.346459 14.810401 17.342769 20.240163 23.428880 27.516624 32.545643 40.301420 24 8.925853 11.658386 14.462930 15.985473 18.585784 21.558096 24	16	3.244545	4.741882	6.439830	7.403564	9.244188	11.367700	13.803266	17.116461	21.396011	28.429339
19 5.040161 7.020506 9.172684 10.366381 12.548315 15.055145 17.879633 21.617740 26.338248 33.851709 20 5.731690 7.870595 10.165829 11.431855 13.713133 16.331168 19.263208 23.110574 27.935091 35.545692 21 6.467720 8.762054 11.194685 12.530097 14.902967 17.623250 20.651699 24.593206 29.502784 37.184306 22 7.246658 9.692304 12.255978 13.657463 16.114039 18.927451 22.041357 26.062700 31.039941 38.768990 23 8.066698 10.658664 13.346459 14.810401 17.342769 20.240163 23.428880 27.516624 32.545643 40.301420 24 8.925853 11.658386 14.462930 15.985473 18.585784 21.558096 24.811375 28.952986 34.019346 41.783417 25 9.821992 12.688687 15.602275 17.179384 19.839925 22.878270 <td< td=""><td>17</td><td>3.795687</td><td>5.454010</td><td>7.306523</td><td>8.348542</td><td>10.309683</td><td>12.568668</td><td>15.144662</td><td>18.616162</td><td>23.065636</td><td>30.293780</td></td<>	17	3.795687	5.454010	7.306523	8.348542	10.309683	12.568668	15.144662	18.616162	23.065636	30.293780
20 5.731690 7.870595 10.165829 11.431855 13.713133 16.331168 19.263208 23.110574 27.935091 35.545692 21 6.467720 8.762054 11.194685 12.530097 14.902967 17.623250 20.651699 24.593206 29.502784 37.184306 22 7.246658 9.692304 12.255978 13.657463 16.114039 18.927451 22.041357 26.062700 31.039941 38.768990 23 8.066698 10.658664 13.346459 14.810401 17.342769 20.240163 23.428880 27.516624 32.545643 40.301420 24 8.925853 11.658386 14.462930 15.985473 18.585784 21.558096 24.811375 28.952986 34.019346 41.783417 25 9.821992 12.688687 15.602275 17.179384 19.839925 22.878270 26.186325 30.370173 35.460813 43.216885 26 10.752863 13.746781 16.761474 18.388990 21.102252 24.197998 27.551553 31.766900 36.870044 44.603759 28 <	18	4.394473	6.214227	8.218512	9.337373	11.412464	13.799448	16.505206	20.118217	24.714212	32.101269
21 6.467720 8.762054 11.194685 12.530097 14.902967 17.623250 20.651699 24.593206 29.502784 37.184306 22 7.246658 9.692304 12.255978 13.657463 16.114039 18.927451 22.041357 26.062700 31.039941 38.768990 23 8.066698 10.658664 13.346459 14.810401 17.342769 20.240163 23.428880 27.516624 32.545643 40.301420 24 8.925853 11.658386 14.462930 15.985473 18.585784 21.558096 24.811375 28.952986 34.019346 41.783417 25 9.821992 12.688687 15.602275 17.179384 19.839925 22.878270 26.186325 30.370173 35.460813 43.216885 26 10.752863 13.746781 16.761474 18.388990 21.102252 24.197998 27.551553 31.766900 36.870044 44.603759 27 11.716131 14.829898 17.937621 19.611314 22.370042 25.514868 28.905184 33.142161 38.247233 45.945970 28	19	5.040161	7.020506	9.172684	10.366381	12.548315	15.055145	17.879633	21.617740	26.338248	33.851709
22 7.246658 9.692304 12.255978 13.657463 16.114039 18.927451 22.041357 26.062700 31.039941 38.768990 23 8.066698 10.658664 13.346459 14.810401 17.342769 20.240163 23.428880 27.516624 32.545643 40.301420 24 8.925853 11.658386 14.462930 15.985473 18.585784 21.558096 24.811375 28.952986 34.019346 41.783417 25 9.821992 12.688687 15.602275 17.179384 19.839925 22.878270 26.186325 30.370173 35.460813 43.216885 26 10.752863 13.746781 16.761474 18.388990 21.102252 24.197998 27.551553 31.766900 36.870044 44.603759 27 11.716131 14.829898 17.937621 19.611314 22.370042 25.514868 28.905184 33.142161 38.247233 45.945970 28 12.709401 15.935312 19.127936 20.843553 23.640779 26.826725 30.245615 34.495190 39.592717 47.245417 29	20	5.731690	7.870595	10.165829	11.431855	13.713133	16.331168	19.263208	23.110574	27.935091	35.545692
23 8.066698 10.658664 13.346459 14.810401 17.342769 20.240163 23.428880 27.516624 32.545643 40.301420 24 8.925853 11.658386 14.462930 15.985473 18.585784 21.558096 24.811375 28.952986 34.019346 41.783417 25 9.821992 12.688687 15.602275 17.179384 19.839925 22.878270 26.186325 30.370173 35.460813 43.216885 26 10.752863 13.746781 16.761474 18.388990 21.102252 24.197998 27.551553 31.766900 36.870044 44.603759 27 11.716131 14.829898 17.937621 19.611314 22.370042 25.514868 28.905184 33.142161 38.247233 45.945970 28 12.709401 15.935312 19.127936 20.843553 23.640779 26.826725 30.245615 34.495190 39.592717 47.245417 29 13.730244 17.060358 20.329775 22.083077 24.912158 28.131652 31.571487 35.825422 40.906950 48.503948	21	6.467720	8.762054	11.194685	12.530097	14.902967	17.623250	20.651699	24.593206	29.502784	37.184306
24 8.925853 11.658386 14.462930 15.985473 18.585784 21.558096 24.811375 28.952986 34.019346 41.783417 25 9.821992 12.688687 15.602275 17.179384 19.839925 22.878270 26.186325 30.370173 35.460813 43.216885 26 10.752863 13.746781 16.761474 18.388990 21.102252 24.197998 27.551553 31.766900 36.870044 44.603759 27 11.716131 14.829898 17.937621 19.611314 22.370042 25.514868 28.905184 33.142161 38.247233 45.945970 28 12.709401 15.935312 19.127936 20.843553 23.640779 26.826725 30.245615 34.495190 39.592717 47.245417 29 13.730244 17.060358 20.329775 22.083077 24.912158 28.131652 31.571487 35.825422 40.906950 48.503948	22	7.246658	9.692304	12.255978	13.657463	16.114039	18.927451	22.041357	26.062700	31.039941	38.768990
25 9.821992 12.688687 15.602275 17.179384 19.839925 22.878270 26.186325 30.370173 35.460813 43.216885 26 10.752863 13.746781 16.761474 18.388990 21.102252 24.197998 27.551553 31.766900 36.870044 44.603759 27 11.716131 14.829898 17.937621 19.611314 22.370042 25.514868 28.905184 33.142161 38.247233 45.945970 28 12.709401 15.935312 19.127936 20.843553 23.640779 26.826725 30.245615 34.495190 39.592717 47.245417 29 13.730244 17.060358 20.329775 22.083077 24.912158 28.131652 31.571487 35.825422 40.906950 48.503948	23	8.066698	10.658664	13.346459	14.810401	17.342769	20.240163	23.428880	27.516624	32.545643	40.301420
26 10.752863 13.746781 16.761474 18.388990 21.102252 24.197998 27.551553 31.766900 36.870044 44.603759 27 11.716131 14.829898 17.937621 19.611314 22.370042 25.514868 28.905184 33.142161 38.247233 45.945970 28 12.709401 15.935312 19.127936 20.843553 23.640779 26.826725 30.245615 34.495190 39.592717 47.245417 29 13.730244 17.060358 20.329775 22.083077 24.912158 28.131652 31.571487 35.825422 40.906950 48.503948	24	8.925853	11.658386	14.462930	15.985473	18.585784	21.558096	24.811375	28.952986	34.019346	41.783417
26 10.752863 13.746781 16.761474 18.388990 21.102252 24.197998 27.551553 31.766900 36.870044 44.603759 27 11.716131 14.829898 17.937621 19.611314 22.370042 25.514868 28.905184 33.142161 38.247233 45.945970 28 12.709401 15.935312 19.127936 20.843553 23.640779 26.826725 30.245615 34.495190 39.592717 47.245417 29 13.730244 17.060358 20.329775 22.083077 24.912158 28.131652 31.571487 35.825422 40.906950 48.503948	25	9.821992	12.688687	15.602275	17.179384	19.839925	22.878270	26.186325	30.370173	35.460813	43.216885
27 11.716131 14.829898 17.937621 19.611314 22.370042 25.514868 28.905184 33.142161 38.247233 45.945970 28 12.709401 15.935312 19.127936 20.843553 23.640779 26.826725 30.245615 34.495190 39.592717 47.245417 29 13.730244 17.060358 20.329775 22.083077 24.912158 28.131652 31.571487 35.825422 40.906950 48.503948	26									36.870044	
28 12.709401 15.935312 19.127936 20.843553 23.640779 26.826725 30.245615 34.495190 39.592717 47.245417 29 13.730244 17.060358 20.329775 22.083077 24.912158 28.131652 31.571487 35.825422 40.906950 48.503948	27										
29 13.730244 17.060358 20.329775 22.083077 24.912158 28.131652 31.571487 35.825422 40.906950 48.503948	28										
	29										
		14.776220	18.202443	21.540635	23.327436	26.182066	29.427952	32.881653	37.132462		49.723352

		Rating							
Tenor	BB+	ВВ	BB-	B +	В	В-	CCC+	CCC	CCC-
0	0	0	0	0	0	0	0	0	0
1	1.051627	2.109451	2.600238	3.221175	7.848052	10.882127	15.688600	20.494984	25.301275
2	2.499656	4.644348	5.872070	7.597534	14.781994	20.010198	28.039819	34.622676	40.104827
3	4.296729	7.475880	9.536299	12.379110	20.934989	27.616832	37.429809	44.486183	49.823181

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	Rating								
Tenor	BB+	ВВ	BB-	B +	В	B-	CCC+	CCC	CCC-
4	6.375706	10.488373	13.369967	17.163869	26.396576	33.956728	44.585491	51.602827	56.644894
5	8.664544	13.586821	17.214556	21.748448	31.246336	39.272130	50.135335	56.922985	61.661407
6	11.095356	16.697807	20.966483	26.041061	35.559617	43.770645	54.540771	61.035699	65.491579
7	13.609032	19.767400	24.563596	30.011114	39.406428	47.620000	58.122986	64.312999	68.512300
8	16.156890	22.757944	27.972842	33.660308	42.849805	50.951513	61.102369	66.995611	70.963159
9	18.700581	25.644678	31.180555	37.006268	45.945037	53.866495	63.630626	69.243071	73.001159
10	21.211084	28.412675	34.185384	40.073439	48.739741	56.442784	65.813448	71.163565	74.731801
11	23.667314	31.054264	36.993388	42.888153	51.274446	58.740339	67.725700	72.832114	76.227640
12	26.054666	33.566968	39.614764	45.476090	53.583431	60.805678	69.421440	74.301912	77.539705
13	28.363660	35.951906	42.061729	47.861084	55.695612	62.675243	70.940493	75.611515	78.704697
14	30.588762	38.212600	44.347194	50.064659	57.635391	64.377918	72.312813	76.789485	79.749592
15	32.727407	40.354091	46.483968	52.105958	59.423407	65.936872	73.561381	77.857439	80.694661
16	34.779204	42.382307	48.484306	54.001869	61.077177	67.370926	74.704179	78.832075	81.555449
17	36.745314	44.303617	50.359673	55.767228	62.611640	68.695550	75.755528	79.726540	82.344119
18	38.627975	46.124519	52.120647	57.415059	64.039598	69.923606	76.727026	80.551376	83.070367
19	40.430133	47.851440	53.776900	58.956797	65.372082	71.065901	77.628212	81.315171	83.742047
20	42.155172	49.490597	55.337225	60.402500	66.618643	72.131608	78.467035	82.025027	84.365628
21	43.806716	51.047918	56.809591	61.761037	67.787598	73.128577	79.250199	82.686894	84.946502
22	45.388482	52.528995	58.201208	63.040250	68.886224	74.063579	79.983418	83.305814	85.489225
23	46.904180	53.939064	59.518589	64.247092	69.920916	74.942503	80.671609	83.886103	85.997683
24	48.357444	55.282998	60.767623	65.387746	70.897320	75.770492	81.319036	84.431487	86.475223
25	49.751780	56.565320	61.953636	66.467726	71.820441	76.552075	81.929422	84.945209	86.924750
26	51.090543	57.790210	63.081447	67.491964	72.694731	77.291249	82.506039	85.430110	87.348805
27	52.376916	58.961526	64.155419	68.464885	73.524165	77.991566	83.051779	85.888693	87.749621
28	53.613901	60.082826	65.179512	69.390464	74.312302	78.656191	83.569207	86.323175	88.129173
29	54.804319	61.157385	66.157321	70.272285	75.062339	79.287952	84.060611	86.735528	88.489217
30	55.950815	62.188218	67.092112	71.113583	75.777155	79.889391	84.528038	87.127511	88.831318

Table 2

Region Code	Region Name		Country Name
17	Africa: Eastern	253	Djibouti
17	Africa: Eastern	291	Eritrea
17	Africa: Eastern	251	Ethiopia
17	Africa: Eastern	254	Kenya
17	Africa: Eastern	252	Somalia
17	Africa: Eastern	249	Sudan
12	Africa: Southern	247	Ascension
12	Africa: Southern	267	Botswana
12	Africa: Southern	266	Lesotho
12	Africa: Southern	230	Mauritius

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Region Code	Region Name	Country Code	Country Name
12	Africa: Southern	264	Namibia
12	Africa: Southern	248	Seychelles
12	Africa: Southern	27	South Africa
12	Africa: Southern	290	St. Helena
12	Africa: Southern	268	Swaziland
13	Africa: Sub-Saharan	244	Angola
13	Africa: Sub-Saharan	226	Burkina Faso
13	Africa: Sub-Saharan	257	Burundi
13	Africa: Sub-Saharan	225	Cote d'Ivoire
13	Africa: Sub-Saharan	240	Equatorial Guinea
13	Africa: Sub-Saharan	241	Gabonese Republic
13	Africa: Sub-Saharan	220	Gambia
13	Africa: Sub-Saharan	233	Ghana
13	Africa: Sub-Saharan	224	Guinea
13	Africa: Sub-Saharan	245	Guinea-Bissau
13	Africa: Sub-Saharan	231	Liberia
13	Africa: Sub-Saharan	261	Madagascar
13	Africa: Sub-Saharan	265	Malawi
13	Africa: Sub-Saharan	223	Mali
13	Africa: Sub-Saharan	222	Mauritania
13	Africa: Sub-Saharan	258	Mozambique
13	Africa: Sub-Saharan	227	Niger
13	Africa: Sub-Saharan	234	Nigeria
13	Africa: Sub-Saharan	250	Rwanda
13	Africa: Sub-Saharan	239	Sao Tome & Principe
13	Africa: Sub-Saharan	221	Senegal
13	Africa: Sub-Saharan	232	Sierra Leone
13	Africa: Sub-Saharan	255	Tanzania/Zanzibar
13	Africa: Sub-Saharan	228	Togo
13	Africa: Sub-Saharan	256	Uganda
13	Africa: Sub-Saharan	260	Zambia
13	Africa: Sub-Saharan	263	Zimbabwe
13	Africa: Sub-Saharan	229	Benin
13	Africa: Sub-Saharan	237	Cameroon
13	Africa: Sub-Saharan	238	Cape Verde Islands
13	Africa: Sub-Saharan	236	Central African Republic
13	Africa: Sub-Saharan	235	Chad
13	Africa: Sub-Saharan	269	Comoros
13	Africa: Sub-Saharan	242	Congo-Brazzaville
13	Africa: Sub-Saharan	243	Congo-Kinshasa
3	Americas: Andean	591	Bolivia
3	Americas: Andean	57	Colombia

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Region Code	Region Name	Country Code	Country Name
3	Americas: Andean	593	Ecuador
3	Americas: Andean	51	Peru
3	Americas: Andean	58	Venezuela
4	Americas: Mercosur and Southern Cone	54	Argentina
4	Americas: Mercosur and Southern Cone	55	Brazil
4	Americas: Mercosur and Southern Cone	56	Chile
4	Americas: Mercosur and Southern Cone	595	Paraguay
4	Americas: Mercosur and Southern Cone	598	Uruguay
1	Americas: Mexico	52	Mexico
2	Americas: Other Central and Caribbean	1264	Anguilla
2	Americas: Other Central and Caribbean	1268	Antigua
2	Americas: Other Central and Caribbean	1242	Bahamas
2	Americas: Other Central and Caribbean	246	Barbados
2	Americas: Other Central and Caribbean	501	Belize
2	Americas: Other Central and Caribbean	441	Bermuda
2	Americas: Other Central and Caribbean	284	British Virgin Islands
2	Americas: Other Central and Caribbean	345	Cayman Islands
2	Americas: Other Central and Caribbean	506	Costa Rica
2	Americas: Other Central and Caribbean	809	Dominican Republic
2	Americas: Other Central and Caribbean	503	El Salvador
2	Americas: Other Central and Caribbean	473	Grenada
2	Americas: Other Central and Caribbean	590	Guadeloupe
2	Americas: Other Central and Caribbean	502	Guatemala
2	Americas: Other Central and Caribbean	504	Honduras
2	Americas: Other Central and Caribbean	876	Jamaica
2	Americas: Other Central and Caribbean	596	Martinique
2	Americas: Other Central and Caribbean	505	Nicaragua
2	Americas: Other Central and Caribbean	507	Panama
2	Americas: Other Central and Caribbean	869	St. Kitts/Nevis
2	Americas: Other Central and Caribbean	758	St. Lucia
2	Americas: Other Central and Caribbean	784	St. Vincent & Grenadines
2	Americas: Other Central and Caribbean	597	Suriname
2	Americas: Other Central and Caribbean	868	Trinidad& Tobago
2	Americas: Other Central and Caribbean	649	Turks & Caicos
2	Americas: Other Central and Caribbean	297	Aruba
2	Americas: Other Central and Caribbean	53	Cuba
2	Americas: Other Central and Caribbean	599	Curacao
2	Americas: Other Central and Caribbean	767	Dominica
2	Americas: Other Central and Caribbean	594	French Guiana
2	Americas: Other Central and Caribbean	592	Guyana
2	Americas: Other Central and Caribbean	509	Haiti
2	Americas: Other Central and Caribbean	664	Montserrat

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Region Code	Region Name	Country Code	Country Name
101	Americas: U.S. and Canada	2	Canada
101	Americas: U.S. and Canada	1	USA
7	Asia: China, Hong Kong, Taiwan	86	China
7	Asia: China, Hong Kong, Taiwan	852	Hong Kong
7	Asia: China, Hong Kong, Taiwan	886	Taiwan
5	Asia: India, Pakistan and Afghanistan	93	Afghanistan
5	Asia: India, Pakistan and Afghanistan	91	India
5	Asia: India, Pakistan and Afghanistan	92	Pakistan
6	Asia: Other South	880	Bangladesh
6	Asia: Other South	975	Bhutan
6	Asia: Other South	960	Maldives
6	Asia: Other South	977	Nepal
6	Asia: Other South	94	Sri Lanka
8	Asia: Southeast, Korea and Japan	673	Brunei
8	Asia: Southeast, Korea and Japan	855	Cambodia
8	Asia: Southeast, Korea and Japan	62	Indonesia
8	Asia: Southeast, Korea and Japan	81	Japan
8	Asia: Southeast, Korea and Japan	856	Laos
8	Asia: Southeast, Korea and Japan	60	Malaysia
8	Asia: Southeast, Korea and Japan	95	Myanmar
8	Asia: Southeast, Korea and Japan	850	North Korea
8	Asia: Southeast, Korea and Japan	63	Philippines
8	Asia: Southeast, Korea and Japan	65	Singapore
8	Asia: Southeast, Korea and Japan	82	South Korea
8	Asia: Southeast, Korea and Japan	66	Thailand
8	Asia: Southeast, Korea and Japan	84	Vietnam
8	Asia: Southeast, Korea and Japan	670	East Timor
105	Asia-Pacific: Australia and New Zealand	61	Australia
105	Asia-Pacific: Australia and New Zealand	682	Cook Islands
105	Asia-Pacific: Australia and New Zealand	64	New Zealand
9	Asia-Pacific: Islands	679	Fiji
9	Asia-Pacific: Islands	689	French Polynesia
9	Asia-Pacific: Islands	686	Kiribati
9	Asia-Pacific: Islands	691	Micronesia
9	Asia-Pacific: Islands	674	Nauru
9	Asia-Pacific: Islands	687	New Caledonia
9	Asia-Pacific: Islands	680	Palau
9	Asia-Pacific: Islands	675	Papua New Guinea
9	Asia-Pacific: Islands	685	Samoa
9	Asia-Pacific: Islands	677	Solomon Islands
9	Asia-Pacific: Islands	676	Tonga
9	Asia-Pacific: Islands	688	Tuvalu

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Region Code	Region Name	Country Code	Country Name
9	Asia-Pacific: Islands	678	Vanuatu
15	Europe: Central	420	Czech Republic
15	Europe: Central	372	Estonia
15	Europe: Central	36	Hungary
15	Europe: Central	371	Latvia
15	Europe: Central	370	Lithuania
15	Europe: Central	48	Poland
15	Europe: Central	421	Slovak Republic
16	Europe: Eastern	355	Albania
16	Europe: Eastern	387	Bosnia and Herzegovina
16	Europe: Eastern	359	Bulgaria
16	Europe: Eastern	385	Croatia
16	Europe: Eastern	383	Kosovo
16	Europe: Eastern	389	Macedonia
16	Europe: Eastern	382	Montenegro
16	Europe: Eastern	40	Romania
16	Europe. Eastern	381	Serbia
16	Europe: Eastern	90	Turkey
14	Europe: Russia & CIS	374	Armenia
14	Europe: Russia & CIS	994	Azerbaijan
14	Europe: Russia & CIS	375	Belarus
14	Europe: Russia & CIS	995	Georgia
14	Europe: Russia & CIS	8	Kazakhstan
14	Europe: Russia & CIS	996	Kyrgyzstan
14	Europe: Russia & CIS	373	Moldova
14	Europe: Russia & CIS	976	Mongolia
14	Europe: Russia & CIS	7	Russia
14	Europe: Russia & CIS	992	Tajikistan
14	Europe: Russia & CIS	993	Turkmenistan
14	Europe: Russia & CIS	380	Ukraine
14	Europe: Russia & CIS	998	Uzbekistan
102	Europe: Western	376	Andorra
102	Europe: Western	43	Austria
102	Europe: Western	32	Belgium
102	Europe: Western	357	Cyprus
102	Europe: Western	45	Denmark
102	Europe: Western	358	Finland
102	Europe: Western	33	France
102	Europe: Western	49	Germany
102	Europe: Western	30	Greece
102	Europe: Western	354	Iceland
102	Europe: Western	353	Ireland

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Region Code	Region Name	Country Code	Country Name
102	Europe: Western	101	Isle of Man
102	Europe: Western	39	Italy
102	Europe: Western	102	Liechtenstein
102	Europe: Western	352	Luxembourg
102	Europe: Western	356	Malta
102	Europe: Western	377	Monaco
102	Europe: Western	31	Netherlands
102	Europe: Western	47	Norway
102	Europe: Western	351	Portugal
102	Europe: Western	386	Slovenia
102	Europe: Western	34	Spain
102	Europe: Western	46	Sweden
102	Europe: Western	41	Switzerland
102	Europe: Western	44	United Kingdom
10	Middle East: Gulf States	973	Bahrain
10	Middle East: Gulf States	98	Iran
10	Middle East: Gulf States	964	Iraq
10	Middle East: Gulf States	965	Kuwait
10	Middle East: Gulf States	968	Oman
10	Middle East: Gulf States	974	Qatar
10	Middle East: Gulf States	966	Saudi Arabia
10	Middle East: Gulf States	971	United Arab Emirates
10	Middle East: Gulf States	967	Yemen
11	Middle East: MENA	213	Algeria
11	Middle East: MENA	20	Egypt
11	Middle East: MENA	972	Israel
11	Middle East MENA	962	Jordan
11	Middle East: MENA	961	Lebanon
11	Middle East: MENA	212	Morocco
11	Middle East: MENA	970	Palestinian Settlements
11	Middle East: MENA	963	Syrian Arab Republic
11	Middle East: MENA	216	Tunisia
11	Middle East: MENA	1212	Western Sahara
11	Middle East: MENA	218	Libya

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