MANAGING UNDERWRITERS

Global Debt Capital Markets Review

Full Year 2022

An LSEG Business

REFINITIV®

Global Debt Capital Markets Review

Full Year 2022 | Managing Underwriters

Global Deals Intelligence

GLOBAL DEBT CAPITAL MARKETS ACTIVITY DOWN 19% TO US$8.3 TRILLION

Overall global debt capital markets activity totaled US$8.3 trillion during full year 2022, down 19% compared to full year 2021 and slowest annual period for DCM activity since 2019. The number of new offerings brought to market during full year 2022 totaled 26,625, a 12% decline compared to a year ago and a three-year low. DCM issuance during the fourth quarter of 2022 has decreased 13% compared to the third quarter of this year and fell below US$2 trillion for the second consecutive quarter for the first time since the fourth quarter of 2018.

INVESTMENT GRADE CORPORATE DEBT ISSUANCE DOWN 13%

Global Investment Grade corporate debt offerings totaled US$4.1 trillion during full year 2022, a 13% decrease compared to 2021 levels and the slowest annual period for global high-grade corporate debt since 2019. Investment Grade debt issuance totaled US$825.7 billion during the fourth quarter of 2022, an 11% decline compared to the third quarter of the year and the third consecutive sub-US$1 trillion quarter.

GLOBAL HIGH YIELD DEBT FALLS 80% TO 14-YEAR LOW

Global High Yield debt activity during full year 2022 totaled US$133.2 billion, a decrease of 80% compared to full year 2021 and the slowest annual period for global high yield issuance since 2008. Fourth quarter high yield issuance fell below US$20.0 billion for the first time since the first quarter of 2009. High yield offerings from issuers in the United States, Canada, United Kingdom and France accounted for 76% of full year 2022 issuance, down slightly from 77% a year ago.

GREEN BOND ISSUANCE DECLINES 19%; AGENCY & SOVEREIGN DEBT DOWN 9%

According to figures compiled by Refinitiv and The Climate Bonds Initiative, green bond issuance totaled US$389.5 billion during full year 2022, a 19% decrease compared to year ago levels and the first annual year-over-year decline since records began in 2015. The fourth quarter of 2022 marked the second consecutive quarter to register below US$100 billion in two years. Debt issuance from agency, sovereign and supranational issuers totaled US$2.7 trillion during full year 2022, down 9% from a year ago.

FINANCIALS, GOVERNMENT & AGENCIES ACCOUNT FOR 78% OF GLOBAL ISSUANCE

DCM activity from Financials, Government & Agency issuers accounted for 78% of issuance during the full year 2022, up from 73% during full year 2021. Global debt issuance, excluding financials and governments & agencies, totaled US$1.8 trillion during full year 2022, down 35% compared to 2021 levels and accounted for 22% of overall issuance, down from 27% a year ago.

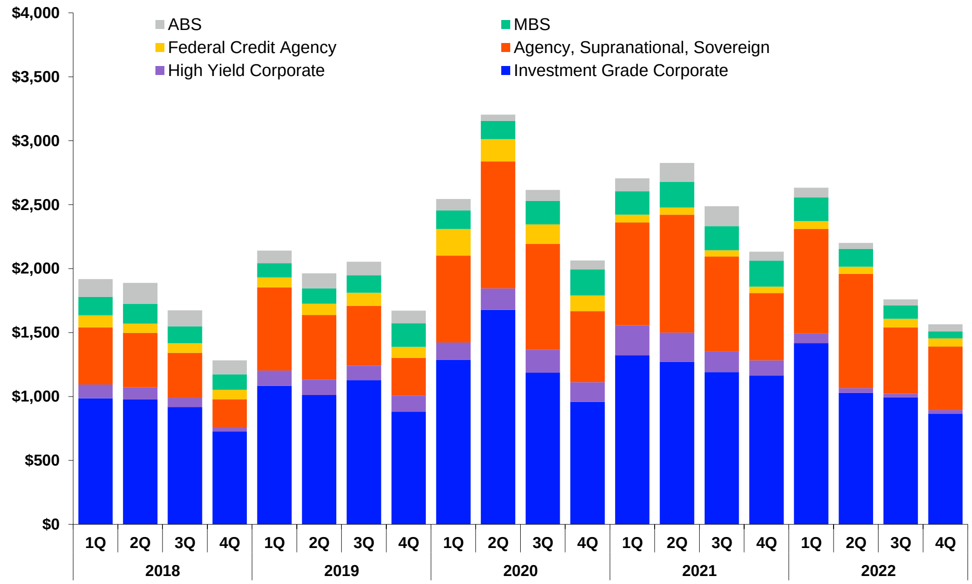
INTERNATIONAL BOND OFFERINGS DOWN 30%; EMERGING MARKETS DOWN 42%

International bond offerings totaled US$3.6 trillion during full year 2022, a 30% decrease compared to a year ago. Debt from emerging market corporate issuers totaled US$225.8 billion during full year 2022, down 42% compared to a year ago. Corporate debt issuers from India, Thailand, Malaysia and Brazil accounted for 60% of emerging markets activity during full year 2022.

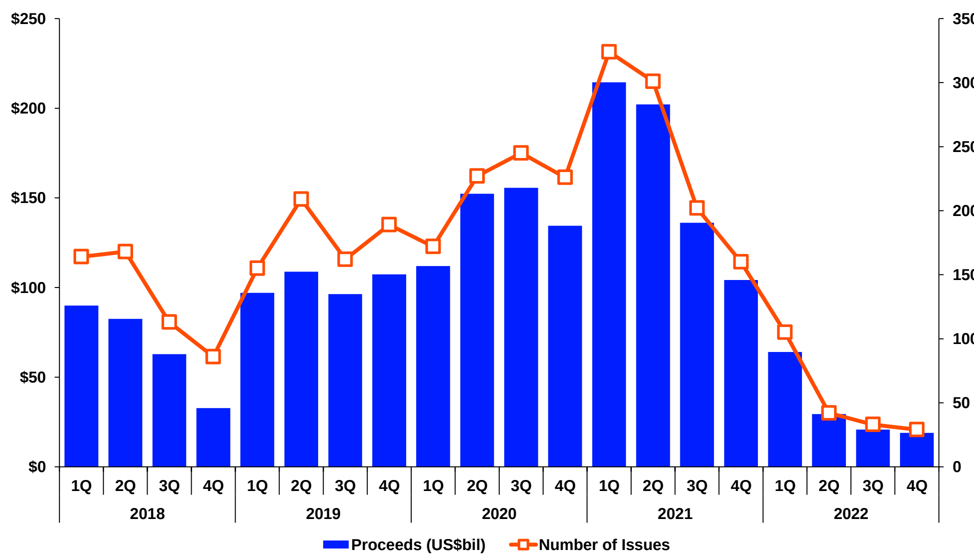
RECORD ASIA LOCAL CURRENCY DEBT; JAPANESE YEN DEBT HITS SIX-YEAR LOW

Asia local currency bond offerings totaled US$3.4 trillion during full year 2022, a 4% increase compared to a year ago and the strongest annual period for issuance since records began in 1980. China Yuan offerings have increased 14% compared to a year ago. Japanese Yen offerings have decreased 16% compared to full year 2021, totaling JPY22.5 trillion and a six-year low.

Global Debt Capital Markets - Issue Type Composition (US$bil)



Global High Yield Corporate Debt - Quarterly Issuance



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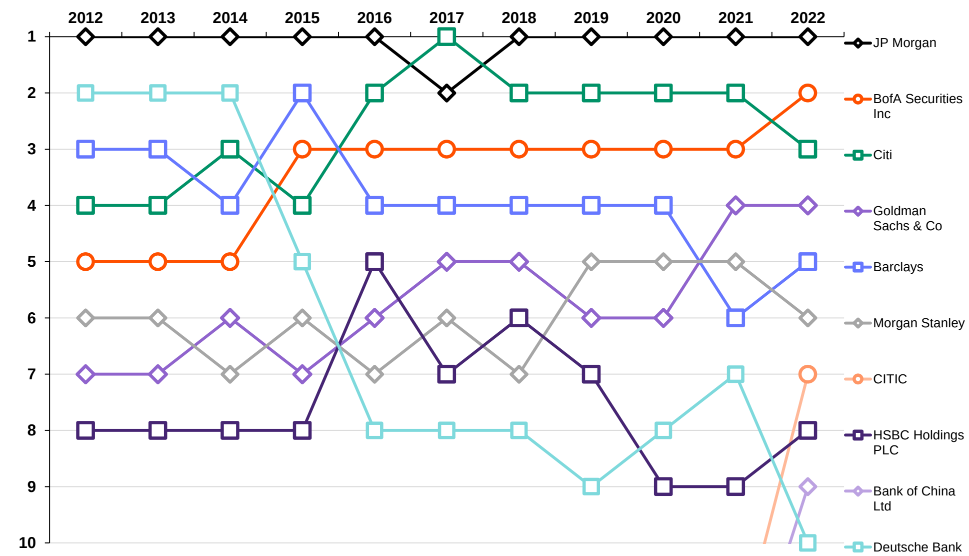
Global Insights

Full Year 2022 | Debt Capital Markets | Managing Underwriters

Global Debt Rankings by Proceeds

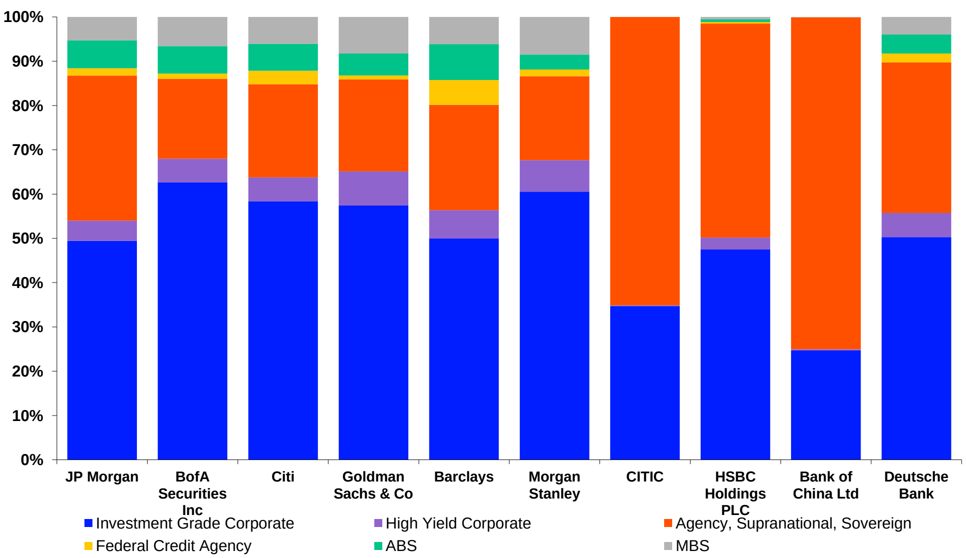


*League Table positions reflect consolidation within the banking sector. Rankings are as of the current quarter end in each calendar year.

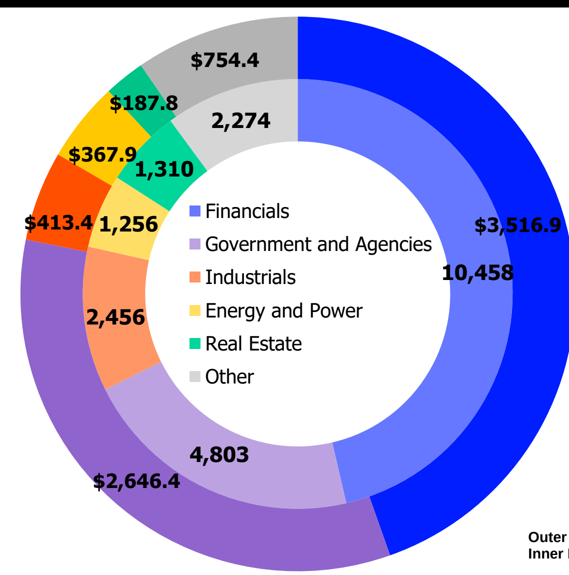
Global Scorecard

	1/1/2022- 12/31/2022 Proceeds ($mil)	# of Deals	1/1/2021 - 12/31/2021 Proceeds ($mil)	# of Deals	YoY % Chg. ($)
All Global Debt (B1)	**8,347,333**	**26,625**	**10,342,107**	**30,326**	**-19%** ▼
Global Long-term Debt (B2)	7,960,334	23,048	9,899,581	26,830	-20% ▼
Global Long-term Debt ex MBS, ABS & Munis (B3)	7,080,964	21,112	8,540,224	24,350	-17% ▼
Global High Yield Corporate Debt (B4)	133,161	209	656,927	987	-80% ▼
Global Investment Grade Corporate Debt (B7)	4,085,911	15,035	4,677,214	16,767	-13% ▼
US Federal Credit Agency Debt (B8)	147,478	803	125,529	636	17% ▲
Global Agency, Sovereign & Supranational (B9)	2,656,436	4,970	2,913,881	5,702	-9% ▼
Global Mortgage-backed Securities (B10)	486,179	1,090	778,298	1,312	-38% ▼
Global Asset-backed Securities (B11)	393,191	846	581,059	1,168	-32% ▼
Global Short-term Debt (B14)	427,988	3,842	493,365	3,778	-13% ▼
Global Emerging Markets Corporate Debt (B15)	225,800	1,362	391,842	1,495	-42% ▼
All US Debt (F1)	**2,496,530**	**3,894**	**3,696,092**	**5,825**	**-32%** ▼
US Long-term Debt (F2)	2,357,153	2,454	3,506,278	4,284	-33% ▼
US Long-term Straight ex MBS, ABS & Munis (F3)	1,753,783	2,501	2,537,015	3,950	-31% ▼
US Federal Credit Agency Debt (F7)	135,966	773	112,908	600	20% ▲
US High Yield Corporate Debt (F8)	104,015	132	464,030	631	-78% ▼
US Investment Grade (F9)	1,208,267	824	1,455,861	1,280	-17% ▼
Agency, Sovereign & Supranational Debt (F10)	253,346	718	394,728	1,268	-36% ▼
US Mortgage-backed Securities (F11)	417,718	836	689,655	1,056	-39% ▼
US Asset-backed Securities (F14)	325,029	557	469,423	819	-31% ▼
US Taxable Municipal Debt (F15)	25,317	583	49,692	1,058	-49% ▼
US Short-term Debt - including MBS, ABS (F16)	139,377	1,440	189,814	1,541	-27% ▼

Top 10 Global Debt Bookrunners by Proceeds - Issue Type Composition



Global Debt Capital Markets - Macro Industry Composition



Outer Ring: Proceeds (US$bil)
Inner Ring: # Deals

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Global Rankings

Full Year 2022 | Debt Capital Markets | Managing Underwriters

Global Debt (B1) — YoY Change ($) -19% — QoQ Change ($) -13%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
JP Morgan	1	1	387,966	4.7	-1.2	1,427
BofA Securities Inc	2	3	327,796	3.9	-0.6	1,130
Citi	3	2	316,243	3.8	-0.7	1,146
Goldman Sachs & Co	4	4	257,414	3.1	-0.8	844
Barclays	5	6	247,104	3.0	-0.1	1,052
Morgan Stanley	6	5	230,982	2.8	-0.9	1,109
CITIC	7	12	222,177	2.7	0.6	3,311
HSBC Holdings PLC	8	9	194,817	2.3	-0.1	939
Bank of China Ltd	9	13	190,597	2.3	0.3	2,871
Deutsche Bank	10	7	189,435	2.3	-0.7	959
ICBC	11	14	180,323	2.2	0.3	2,683
BNP Paribas SA	12	8	173,449	2.1	-0.4	769
Wells Fargo & Co	13	11	169,313	2.0	-0.3	868
China Construction Bank	14	17	162,742	2.0	0.3	2,718
Agricultural Bank of China	15	19	152,075	1.8	0.3	2,489
China Securities Co Ltd	16	18	148,846	1.8	0.2	2,245
RBC Capital Markets	17	15	146,713	1.8	0.0	946
Bank of Communications Co Ltd	18	22	139,872	1.7	0.3	2,316
Credit Agricole CIB	19	21	136,587	1.6	0.1	720
Credit Suisse	20	10	134,554	1.6	-0.7	597
Mizuho Financial Group	21	16	123,162	1.5	-0.2	977
Huatai Securities Co Ltd	22	25	121,885	1.5	0.5	2,167
Nomura	23	20	119,570	1.4	-0.1	734
China International Capital Co	24	32	117,395	1.4	0.6	2,029
TD Securities Inc	25	23	113,017	1.4	0.1	609
Industry Total			**8,347,333**	**100.0**		**26,625**

Global Investment Grade Corporate Debt (B7) — YoY Change ($) -13% — QoQ Change ($) -11%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
BofA Securities Inc	1	2	169,934	4.2	-0.1	581
JP Morgan	2	1	166,300	4.1	-0.9	614
Citi	3	3	145,617	3.6	-0.2	550
CITIC	4	6	134,680	3.3	0.4	1,562
Goldman Sachs & Co	5	4	118,763	2.9	-0.5	368
Morgan Stanley	6	5	115,223	2.8	-0.5	495
HSBC Holdings PLC	7	7	114,361	2.8	0.3	555
China Securities Co Ltd	8	8	98,899	2.4	0.0	1,191
Barclays	9	10	92,759	2.3	0.1	403
BNP Paribas SA	10	9	92,659	2.3	0.1	484
Deutsche Bank	11	12	78,500	1.9	-0.2	425
Mizuho Financial Group	12	11	75,841	1.9	-0.3	499
Bank of China Ltd	13	15	72,122	1.8	0.2	664
Wells Fargo & Co	14	13	71,028	1.7	0.0	263
China International Capital Co	15	20	67,191	1.6	0.3	780
Credit Suisse	16	14	65,883	1.6	0.0	286
Credit Agricole CIB	17	22	64,504	1.6	0.3	380
RBC Capital Markets	18	18	63,374	1.6	0.2	326
Guotai Junan Securities	19	17	62,656	1.5	0.1	801
Societe Generale	20	23	59,808	1.5	0.2	295
ICBC	21	19	58,641	1.4	0.1	473
Huatai Securities Co Ltd	22	21	55,833	1.4	0.1	671
UBS	23	25	54,147	1.3	0.1	292
Mitsubishi UFJ Financial Group	24	16	50,819	1.2	-0.3	250
China Merchants Bank	25	27	46,415	1.1	0.1	548
Industry Total			**4,085,911**	**100.0**		**15,035**

Global Agency, Sovereign Corporate Debt (B9) — YoY Change ($) -9% — QoQ Change ($) -3%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
China Construction Bank	1	4	116,692	4.4	0.2	2,158
ICBC	2	3	116,527	4.4	0.2	2,158
Bank of China Ltd	3	2	113,256	4.3	0.0	2,119
Agricultural Bank of China	4	5	111,773	4.2	0.4	2,077
JP Morgan	5	1	101,349	3.8	-0.5	308
Bank of Communications Co Ltd	6	6	100,565	3.8	0.1	1,877
CITIC	7	15	75,261	2.8	0.4	1,540
Citi	8	7	68,602	2.6	-0.8	153
Deutsche Bank	9	8	66,617	2.5	-0.9	244
Huatai Securities Co Ltd	10	25	62,641	2.4	1.1	1,419
Barclays	11	12	60,877	2.3	-0.2	169
BofA Securities Inc	12	10	59,800	2.3	-0.7	151
HSBC Holdings PLC	13	9	58,311	2.2	-0.9	183
BNP Paribas SA	14	11	54,776	2.1	-0.9	119
Goldman Sachs & Co	15	14	49,491	1.9	-0.5	137
China International Capital Co	16	40	45,901	1.7	1.1	1,167
Credit Agricole CIB	17	16	45,218	1.7	-0.4	133
Industrial Bank Co Ltd	18	20	44,938	1.7	-0.1	889
Morgan Stanley	19	13	44,224	1.7	-0.8	204
China Securities Co Ltd	20	21	42,762	1.6	0.0	936
TD Securities Inc	21	17	42,624	1.6	-0.5	197
RBC Capital Markets	22	18	39,577	1.5	-0.5	202
Nomura	23	19	39,379	1.5	-0.4	230
UniCredit	24	22	32,443	1.2	-0.3	42
Societe Generale	25	23	31,612	1.2	-0.2	72
Industry Total			**2,656,436**	**100.0**		**4,970**

Global MBS (B10) — YoY Change ($) -38% — QoQ Change ($) -48%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
JP Morgan	1	1	52,462	10.8	-2.6	123
Goldman Sachs & Co	2	5	52,098	10.7	0.6	140
BofA Securities Inc	3	7	51,186	10.5	2.8	131
Citi	4	4	46,422	9.6	-0.9	131
Morgan Stanley	5	3	39,481	8.1	-2.6	137
Wells Fargo & Co	6	6	34,427	7.1	-1.3	97
Credit Suisse	7	2	32,710	6.7	-4.7	129
Barclays	8	9	24,728	5.1	1.5	133
Nomura	9	8	19,508	4.0	0.1	72
Truist Financial Corp	10	15	18,138	3.7	2.6	27
Mizuho Financial Group	11	10	14,312	2.9	0.4	80
BMO Capital Markets	12	13	13,884	2.9	1.6	43
Deutsche Bank	13	11	10,218	2.1	-0.4	73
Amherst Securities	14	12	9,945	2.1	0.7	31
National Australia Bank	15	16	6,969	1.4	0.4	50
Performance Trust Capital	16	36	3,920	0.8	0.6	38
BNP Paribas SA	17	20	3,855	0.8	0.2	32
Commonwealth Bank of Australia	18	21	3,608	0.7	0.3	29
Standard Chartered PLC	19	24	3,038	0.6	0.2	26
Westpac Banking	20	19	2,980	0.6	-0.1	31
Sumitomo Mitsui Finl Grp Inc	21	17	2,822	0.6	-0.2	31
Jefferies LLC	22	18	2,640	0.5	-0.2	19
Cantor Fitzgerald LP	23	14	2,545	0.5	-0.6	14
Societe Generale	24	28	2,257	0.5	0.2	8
Mitsubishi UFJ Financial Group	25	31	2,199	0.5	0.3	24
Industry Total			**486,179**	**100.0**		**1,090**

Global ABS (B11) — YoY Change ($) -32% — QoQ Change ($) -32%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
JP Morgan	1	1	38,920	9.9	1.6	138
BofA Securities Inc	2	5	30,942	7.9	1.5	124
Barclays	3	2	28,726	7.3	-0.9	113
Citi	4	3	27,532	7.0	0.2	117
Wells Fargo & Co	5	4	24,833	6.3	-0.4	110
RBC Capital Markets	6	8	23,274	5.9	0.5	94
Credit Suisse	7	7	22,661	5.8	0.0	96
Goldman Sachs & Co	8	6	20,058	5.1	-1.0	80
Mizuho Financial Group	9	12	17,497	4.5	0.7	137
Deutsche Bank	10	9	16,112	4.1	-1.0	89
Morgan Stanley	11	11	14,676	3.7	-0.5	48
BNP Paribas SA	12	10	14,257	3.6	-1.0	61
Mitsubishi UFJ Financial Group	13	14	12,261	3.1	0.5	52
Jefferies LLC	14	13	11,845	3.0	-0.2	46
Societe Generale	15	16	10,017	2.6	0.3	43
Credit Agricole CIB	16	23	6,479	1.7	0.7	29
TD Securities Inc	17	17	6,471	1.7	0.1	31
Guggenheim Securities LLC	18	20	5,874	1.5	0.1	22
BMO Capital Markets	19	19	5,844	1.5	0.1	27
Santander Corp & Invest Bkg	20	18	5,622	1.4	0.0	20
Sumitomo Mitsui Finl Grp Inc	21	22	4,368	1.1	0.0	23
Truist Financial Corp	22	27	3,499	0.9	0.4	24
Natixis	23	15	3,487	0.9	-1.7	13
Lloyds Bank	24	30	2,767	0.7	0.3	12
Daiwa Securities Group Inc	25	25	2,267	0.6	-0.1	5
Industry Total			**393,191**	**100.0**		**846**

Global Debt and Loans Islamic Finance — YoY Change ($) -9% — QoQ Change ($) 37%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
CIMB Group Holdings Bhd	1	1	10,073	16.3	8.5	72
HSBC Holdings PLC	2	2	5,693	9.2	1.5	40
Emirates NBD PJSC	3	6	3,976	6.4	1.6	12
RHB	4	8	3,749	6.1	2.0	57
Malayan Banking Bhd	5	5	3,667	5.9	-0.4	63
Intl Islamic Trade Finance	6	3	3,256	5.3	-2.2	15
Dubai Islamic Bank PJSC	7	9	2,849	4.6	0.5	12
Standard Chartered PLC	8	4	2,625	4.3	-2.7	17
AMMB Holdings Bhd	9	12	2,308	3.7	1.3	40
Citi	10	11	2,253	3.7	-0.2	8
Kuwait Finance House	11	16	1,345	2.2	0.6	8
Gulf International Bank	12	25	1,343	2.2	1.2	3
First Abu Dhabi Bank PJSC	13	7	1,293	2.1	-2.1	9
Saudi National Bank SJSC	14	27	1,110	1.8	1.0	7
Sumitomo Mitsui Finl Grp Inc	15	18	1,079	1.8	0.3	6
Deutsche Bank	16	-	950	1.5	-	3
Gulf Finance House EC	17	-	900	1.5	-	1
Affin Holdings Bhd	18	33	770	1.3	0.6	17
JP Morgan	19	10	636	1.0	-3.0	5
Goldman Sachs & Co	20	14	593	1.0	-0.8	3
BNP Paribas SA	21	17	559	0.9	-0.7	3
Mizuho Financial Group	22	26	532	0.9	0.1	5
Bank Islam Malaysia	23	21	486	0.8	-0.4	7
United Overseas Bank Ltd	24	31	466	0.8	0.0	6
Oversea-Chinese Banking	25	15	447	0.7	-1.0	7
Industry Total			**61,708**	**100.0**		**230**

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United States Insights

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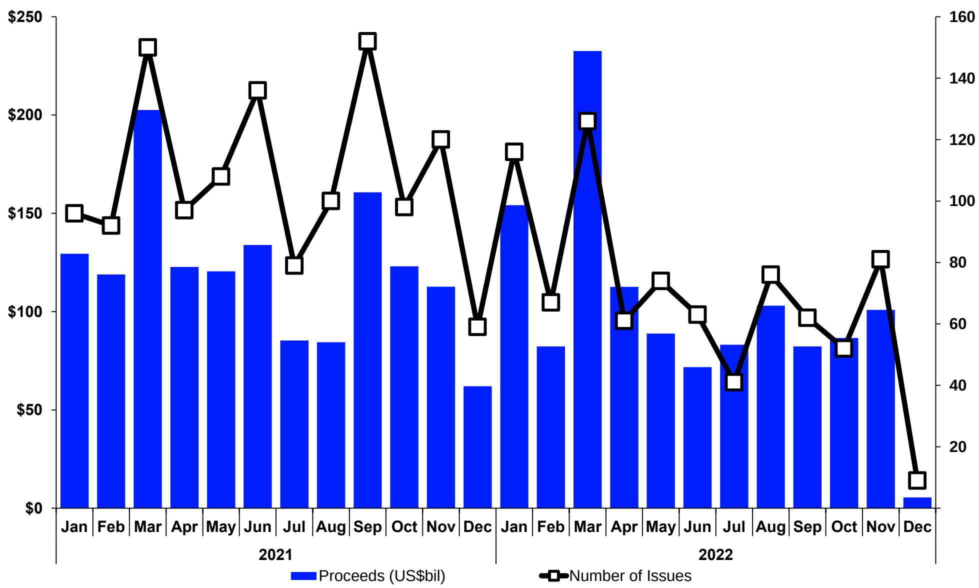
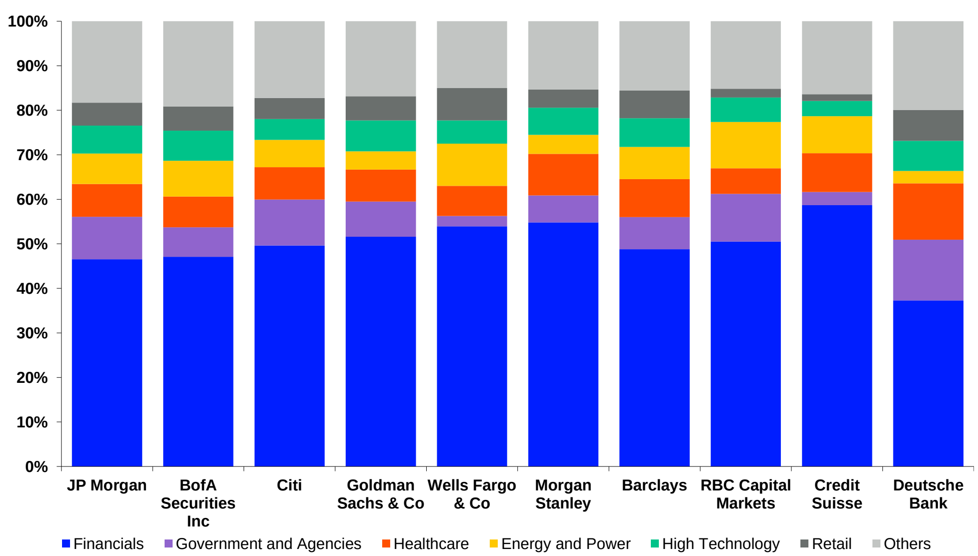
United States Marketed Monthly High Yield Volume



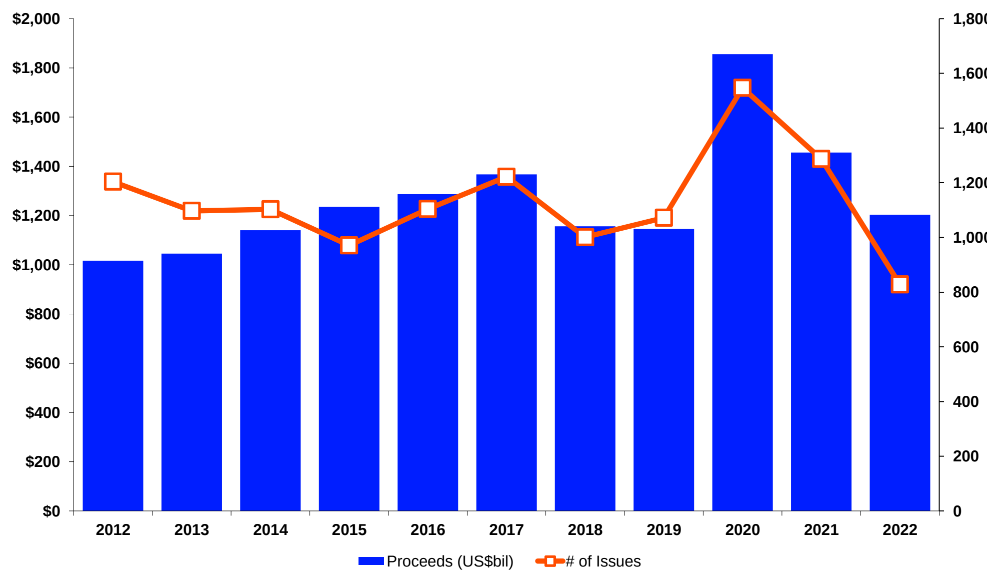
Top United States Investment Grade Corporate Deals

Issue Date	Issuer	Domicile Nation	Deal Size (US$mil)	Issue Type	Macro Sector
3/9/22	Magallanes Inc	United States	30,000	Investment Grade Corporate	Telecommunications
4/11/22	Amazon.com Inc	United States	12,719	Investment Grade Corporate	Retail
1/19/22	Goldman Sachs Group Inc	United States	12,000	Investment Grade Corporate	Financials
7/19/22	Bank of America Corp	United States	10,000	Investment Grade Corporate	Financials
8/4/22	Meta Platforms Inc	United States	9,986	Investment Grade Corporate	High Technology
2/1/22	Bank of America Corp	United States	9,000	Investment Grade Corporate	Financials
10/25/22	UnitedHealth Group Inc	United States	8,957	Investment Grade Corporate	Healthcare
4/21/22	Bank of America Corp	United States	8,750	Investment Grade Corporate	Financials
4/19/22	JPMorgan Chase & Co	United States	8,500	Investment Grade Corporate	Financials
11/29/22	Amazon.com Inc	United States	8,246	Investment Grade Corporate	Retail
11/9/22	GE Healthcare	United States	8,238	Investment Grade Corporate	Healthcare
5/12/22	Intercontinental Exchange Inc	United States	7,965	Investment Grade Corporate	Financials
7/7/22	Celanese US Holdings LLC	United States	7,500	Investment Grade Corporate	Materials

Top 10 United States DCM Bookrunners by Proceeds - Macro Industry Composition



United States Investment Grade - Proceeds



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United States Rankings

Full Year 2022 | Debt Capital Markets | Managing Underwriters

U.S. Debt (F1)
YoY Change ($) -32% QoQ Change ($) -31%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
JP Morgan	1	1	265,261	10.6	-1.2	843
BofA Securities Inc	2	3	245,299	9.8	0.6	806
Citi	3	2	234,797	9.4	0.2	769
Goldman Sachs & Co	4	4	194,161	7.8	0.0	579
Morgan Stanley	5	5	153,980	6.2	-0.5	582
Wells Fargo & Co	6	6	152,284	6.1	0.1	726
Barclays	7	8	140,618	5.6	0.6	593
Credit Suisse	8	7	92,186	3.7	-1.4	352
RBC Capital Markets	9	10	85,925	3.4	0.4	449
Deutsche Bank	10	9	76,557	3.1	-0.7	333
HSBC Holdings PLC	11	12	67,860	2.7	0.4	181
Mizuho Financial Group	12	11	59,487	2.4	-0.1	301
TD Securities Inc	13	15	54,824	2.2	0.3	284
BNP Paribas SA	14	13	54,790	2.2	0.1	229
Mitsubishi UFJ Financial Group	15	14	52,995	2.1	0.1	224
BMO Capital Markets	16	17	45,560	1.8	0.4	166
Nomura	17	16	41,304	1.7	0.1	186
Truist Financial Corp	18	18	40,169	1.6	0.5	287
UBS	19	23	27,188	1.1	0.3	119
Societe Generale	20	22	26,611	1.1	0.2	105
Industry Total			**2,496,530**	**100.0**		**3,894**

U.S. High Yield Corporate Debt (F8)
YoY Change ($) -78% QoQ Change ($) -19%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
JP Morgan	1	1	10,193	9.8	-1.1	63
Goldman Sachs & Co	2	3	9,792	9.4	3.4	62
Morgan Stanley	3	7	8,089	7.8	2.7	46
Citi	4	4	7,684	7.4	1.5	59
BofA Securities Inc	5	2	7,670	7.4	-2.0	74
Barclays	6	6	4,719	4.5	-1.2	46
Wells Fargo & Co	7	5	4,558	4.4	-1.4	47
Credit Suisse	8	9	3,938	3.8	-0.6	35
Deutsche Bank	9	8	3,511	3.4	-1.5	30
RBC Capital Markets	10	10	2,751	2.7	-1.4	32
BNP Paribas SA	11	12	2,720	2.6	0.1	28
PNC Financial Services Group	12	19	2,626	2.5	1.3	24
Truist Financial Corp	13	11	2,615	2.5	-0.1	27
Mitsubishi UFJ Financial Group	14	15	2,372	2.3	0.3	30
Mizuho Financial Group	15	13	2,274	2.2	-0.3	26
Jefferies LLC	16	14	2,174	2.1	-0.1	15
HSBC Holdings PLC	17	16	2,025	2.0	0.1	20
Fifth Third Bancorp	18	21	1,697	1.6	0.5	18
Societe Generale	19	27	1,630	1.6	0.8	12
Scotiabank	20	24	1,480	1.4	0.4	16
Industry Total			**104,015**	**100.0**		**132**

U.S. Investment Grade Debt (F9)
YoY Change ($) -17% QoQ Change ($) -28%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
BofA Securities Inc	1	2	141,681	11.8	0.4	424
JP Morgan	2	1	134,055	11.1	-1.3	407
Citi	3	3	116,086	9.6	0.5	350
Goldman Sachs & Co	4	4	96,772	8.0	-0.4	241
Morgan Stanley	5	5	83,730	7.0	0.1	255
Wells Fargo & Co	6	6	68,068	5.7	0.7	247
Barclays	7	7	55,446	4.6	0.4	178
HSBC Holdings PLC	8	10	48,449	4.0	0.9	111
Mitsubishi UFJ Financial Group	9	9	40,341	3.4	0.0	152
RBC Capital Markets	10	13	37,120	3.1	0.7	164
Deutsche Bank	11	8	33,780	2.8	-0.9	116
BNP Paribas SA	12	14	32,458	2.7	0.5	131
Mizuho Financial Group	13	11	31,602	2.6	-0.5	156
Credit Suisse	14	12	30,502	2.5	-0.2	92
TD Securities Inc	15	15	22,279	1.9	0.0	109
US Bancorp	16	17	21,886	1.8	0.4	109
UBS	17	18	16,348	1.4	0.2	33
Sumitomo Mitsui Finl Grp Inc	18	16	16,288	1.4	-0.4	96
PNC Financial Services Group	19	24	14,014	1.2	0.2	94
Truist Financial Corp	20	20	13,331	1.1	0.0	82
Industry Total			**1,203,741**	**100.0**		**828**

U.S. MBS (F11)
YoY Change ($) -39% QoQ Change ($) -51%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
Goldman Sachs & Co	1	4	51,466	12.3	1.4	136
JP Morgan	2	1	51,144	12.2	-2.7	116
BofA Securities Inc	3	7	46,153	11.1	3.2	117
Citi	4	3	43,642	10.5	-0.7	109
Morgan Stanley	5	5	35,963	8.6	-2.2	131
Wells Fargo & Co	6	6	34,427	8.2	-1.3	97
Credit Suisse	7	2	32,186	7.7	-5.1	124
Barclays	8	9	20,194	4.8	1.5	116
Truist Financial Corp	9	15	18,138	4.3	3.1	27
Nomura	10	8	16,382	3.9	-0.2	69
Industry Total			**417,718**	**100.0**		**836**

U.S. ABS (F14)
YoY Change ($) -31% QoQ Change ($) -33%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
JP Morgan	1	1	36,441	11.2	1.6	129
BofA Securities Inc	2	5	26,735	8.2	1.5	110
Barclays	3	2	25,752	7.9	-0.6	100
Wells Fargo & Co	4	3	24,833	7.6	-0.7	110
Citi	5	4	24,435	7.5	0.1	103
RBC Capital Markets	6	8	22,045	6.8	0.6	84
Credit Suisse	7	7	20,500	6.3	-0.3	88
Goldman Sachs & Co	8	6	19,142	5.9	-0.8	76
Deutsche Bank	9	9	14,071	4.3	-1.0	79
Morgan Stanley	10	10	12,853	4.0	0.1	42
Industry Total			**325,029**	**100.0**		**557**

U.S. ABS ex Self & CDOs (F14b)
YoY Change ($) -17% QoQ Change ($) -24%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
JP Morgan	1	2	27,188	10.9	2.0	106
Barclays	2	1	20,997	8.4	-0.7	86
Citi	3	5	20,199	8.1	1.0	91
RBC Capital Markets	4	6	18,931	7.6	0.5	78
Wells Fargo & Co	5	3	17,917	7.2	-0.6	83
BofA Securities Inc	6	7	16,802	6.7	-0.2	85
Credit Suisse	7	4	14,756	5.9	-1.6	74
Goldman Sachs & Co	8	9	12,236	4.9	-0.6	55
Mizuho Financial Group	9	10	11,161	4.5	0.7	42
Deutsche Bank	10	8	9,937	4.0	-2.1	69
Industry Total			**250,526**	**100.0**		**410**

U.S. Securitizations (ex CMBS, Agency, CMO, Self-Funded & CDOs (F20a)
YoY Change ($) -30% QoQ Change ($) -31%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
Barclays	1	5	29,890	9.7	1.4	160
JP Morgan	2	4	27,275	8.9	0.5	119
Credit Suisse	3	1	24,237	7.9	-1.6	140
BofA Securities Inc	4	3	23,640	7.7	-0.7	118
Citi	5	2	21,963	7.1	-1.5	99
Wells Fargo & Co	6	6	19,546	6.4	-1.3	93
Goldman Sachs & Co	7	7	19,408	6.3	-0.7	100
RBC Capital Markets	8	9	19,141	6.2	1.3	80
Deutsche Bank	9	8	13,239	4.3	-0.6	105
Morgan Stanley	10	10	11,821	3.8	-0.2	71
Industry Total			**307,735**	**100.0**		**595**

*Indicates a Tie

US Residential MBS (F13b)
YoY Change ($) -50% QoQ Change ($) -77%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
Goldman Sachs & Co	1	1	12,006	16.0	1.8	54
Credit Suisse	2	2	10,461	14.0	1.3	72
Barclays	3	9	9,393	12.5	6.4	76
BofA Securities Inc	4	4	6,838	9.1	-1.5	33
Morgan Stanley	5	5	6,829	9.1	-0.4	52
Citi	6	3	6,074	8.1	-3.1	16
Nomura	7	7	4,930	6.6	-1.2	41
Performance Trust Capital	8	14	3,499	4.7	3.9	33
Deutsche Bank	9	11	3,302	4.4	2.3	36
Wells Fargo & Co	10	6	2,725	3.6	-4.3	13
Industry Total			**74,896**	**100.0**		**218**

All Federal Credit Agency Debt (H1)
YoY Change ($) 27% QoQ Change ($) -13%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
Barclays	1	1	16,248	12.2	-1.1	95
Wells Fargo & Co	2	2	14,485	10.9	1.4	201
Nomura	3	3	13,134	9.9	2.4	75
TD Securities Inc	4	6	9,057	6.8	0.7	89
Citi	5	4	8,813	6.6	0.1	66
Daiwa Securities Group Inc	6	5	6,780	5.1	-1.0	114
Academy Securities Inc	7	9	5,020	3.8	0.4	79
RBC Capital Markets	8	17	4,995	3.8	1.9	96
Loop Capital Markets	9	12	4,981	3.8	0.9	81
Jefferies LLC	10	13	4,104	3.1	0.6	52
Industry Total			**132,870**	**100.0**		**770**

International Debt & ESG Bonds Rankings

Full Year 2022 | Debt Capital Markets | Managing Underwriters

All International Bonds (J01)

YoY Change ($) -30% QoQ Change ($) -20%

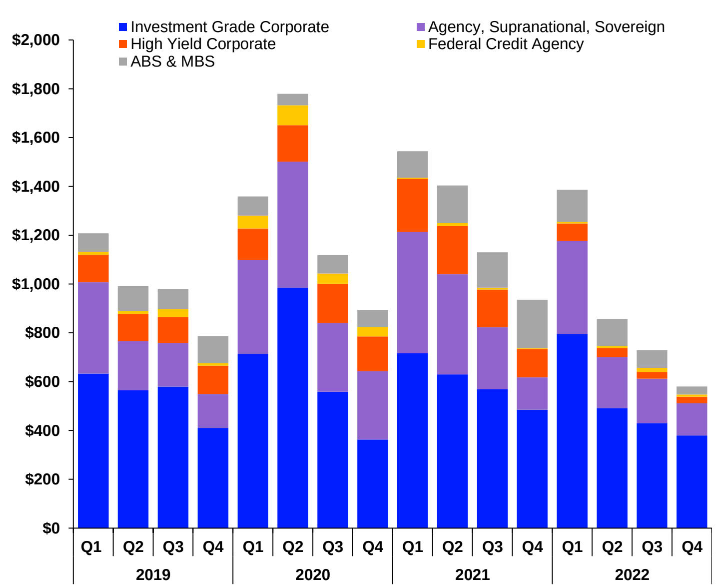
Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh Chg	# of Deals
JP Morgan	1	1	285,936	8.0	-0.6	1,033
BofA Securities Inc	2	2	255,056	7.1	0.2	869
Citi	3	3	242,976	6.8	0.0	841
Goldman Sachs & Co	4	4	200,519	5.6	-0.2	657
Barclays	5	5	189,868	5.3	0.2	777
Morgan Stanley	6	6	164,213	4.6	-0.3	621
HSBC Holdings PLC	7	9	159,407	4.5	0.2	669
BNP Paribas SA	8	8	158,443	4.4	-0.2	664
Deutsche Bank	9	7	151,736	4.3	-0.5	628
Credit Agricole CIB	10	11	111,570	3.1	0.4	529
Societe Generale	11	14	98,584	2.8	0.5	415
Credit Suisse	12	10	93,700	2.6	-0.3	412
RBC Capital Markets	13	13	82,003	2.3	0.0	404
Wells Fargo & Co	14	12	75,979	2.1	-0.4	358
TD Securities Inc	15	15	68,681	1.9	0.2	315
UniCredit	16	18	67,111	1.9	0.3	253
Nomura	17	19	58,900	1.7	0.2	268
Santander Corp & Invest Bkg	18	21	55,458	1.6	0.2	265
Mitsubishi UFJ Financial Group	19	17	52,362	1.5	-0.1	253
NatWest Markets	20	22	50,509	1.4	0.1	234
Mizuho Financial Group	21	16	49,963	1.4	-0.3	356
Natixis	22	20	47,412	1.3	-0.1	261
UBS	23	24	46,860	1.3	0.2	218
Commerzbank AG	24	25	40,621	1.1	0.0	188
BMO Capital Markets	25	27	39,540	1.1	0.1	165
Industry Total			**3,572,960**	**100.0**		**4,941**

All Bonds In Euros (N01)

YoY Change ($) -13% QoQ Change ($) -5%

Bookrunner	Rank 2022	Rank 2021	Proceeds €mil	Market Share	Mkt. Sh Chg	# of Deals
BNP Paribas SA	1	1	94,076	7.4	-0.8	367
JP Morgan	2	2	80,887	6.3	-0.2	296
Credit Agricole CIB	3	4	76,887	6.0	0.8	290
Deutsche Bank	4	3	75,098	5.9	0.0	282
Societe Generale	5	7	66,773	5.2	0.4	257
Barclays	6	5	64,750	5.1	0.0	239
UniCredit	7	11	61,315	4.8	0.4	238
HSBC Holdings PLC	8	6	58,688	4.6	-0.3	244
Citi	9	10	53,743	4.2	-0.2	202
BofA Securities Inc	10	8	53,459	4.2	-0.4	188
Goldman Sachs & Co	11	9	48,559	3.8	-0.7	166
Morgan Stanley	12	12	39,000	3.1	-0.8	152
Natixis	13	13	37,952	3.0	0.0	197
Commerzbank AG	14	14	34,585	2.7	-0.1	163
Santander Corp & Invest Bkg	15	15	31,174	2.4	0.3	159
ING	16	17	28,758	2.3	0.3	166
NatWest Markets	17	16	26,828	2.1	0.0	112
Landesbank Baden-Wurttemberg	18	18	26,375	2.1	0.3	146
DZ Bank	19	19	25,088	2.0	0.3	123
IMI - Intesa Sanpaolo	20	21	20,318	1.6	0.0	64
Nomura	21	20	18,395	1.4	-0.2	46
Credit Suisse	22	22	17,281	1.4	0.0	69
Danske Bank	23	24	17,199	1.4	0.3	81
UBS	24	25	14,394	1.1	0.1	83
TD Securities Inc	25	29	14,174	1.1	0.4	45
Industry Total			**1,278,418**	**100.0**		**1,493**

International Bonds - Issue Type Composition (US$bil)



All Global ESG Bonds (GESG1)

YoY Change ($) -25% QoQ Change ($) -18%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh Chg	# of Deals
JP Morgan	1	1	34,680	5.4	-0.9	154
BofA Securities Inc	2	3	33,138	5.2	0.0	137
Credit Agricole CIB	3	4	31,223	4.9	-0.3	146
HSBC Holdings PLC	4	7	30,024	4.7	-0.1	143
Citi	5	5	29,304	4.6	-0.5	146
BNP Paribas SA	6	2	28,927	4.5	-1.5	151
Deutsche Bank	7	6	25,678	4.0	-0.8	123
Barclays	8	8	24,015	3.7	0.0	101
Societe Generale	9	12	18,949	3.0	0.1	77
Morgan Stanley	10	9	18,745	2.9	-0.3	118
Goldman Sachs & Co	11	10	17,758	2.8	-0.2	92
NatWest Markets	12	11	14,495	2.3	-0.6	61
Nomura	13	13	13,767	2.1	-0.4	93
Mizuho Financial Group	14	20	12,216	1.9	0.5	128
Natixis	15	14	11,915	1.9	-0.5	57
TD Securities Inc	16	15	11,670	1.8	-0.2	48
ING	17	21	10,929	1.7	0.3	68
Daiwa Securities Group Inc	18	36	9,329	1.5	0.9	87
Bank of China Ltd	19	30	8,991	1.4	0.5	102
RBC Capital Markets	20	19	8,964	1.4	-0.1	51
Santander Corp & Invest Bkg	21	16	8,814	1.4	-0.3	57
DZ Bank	22	18	8,813	1.4	-0.2	29
Danske Bank	23	24	8,267	1.3	0.0	64
UniCredit	24	23	8,152	1.3	0.0	46
UBS	25	28	6,725	1.1	0.2	52
Industry Total			**642,170**	**100.0**		**1,443**

*Indicates a Tie

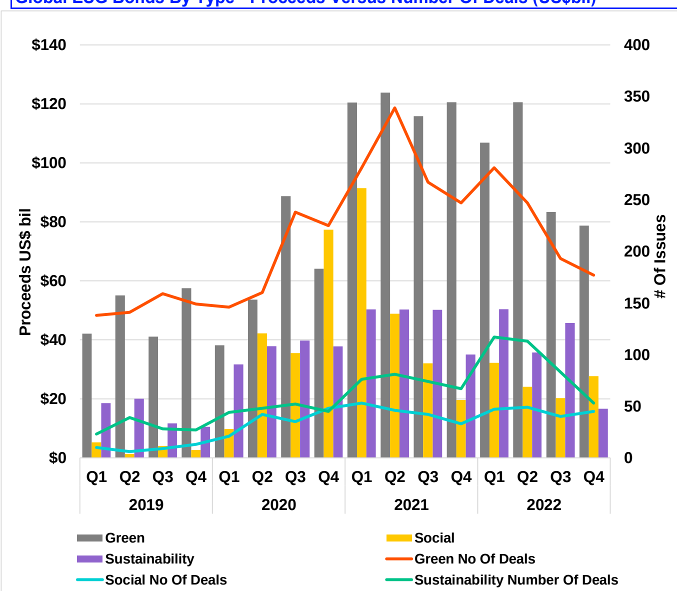
All Global Green Bonds (GR01)**

YoY Change ($) -19% QoQ Change ($) -6%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh Chg	# of Deals
BNP Paribas SA	1	2	18,676	4.8	-0.9	110
BofA Securities Inc	2	6	18,542	4.8	0.4	88
Credit Agricole CIB	3	3	18,041	4.6	-0.6	94
JP Morgan	4	1	17,088	4.4	-1.8	90
Citi	5	4	16,144	4.2	-1.0	95
HSBC Holdings PLC	6	7	15,428	4.0	-0.2	89
Deutsche Bank	7	5	14,473	3.7	-0.9	84
Barclays	8	8	11,873	3.1	-0.1	58
Goldman Sachs & Co	9	11	10,389	2.7	0.3	61
Morgan Stanley	10	12	8,982	2.3	0.0	62
NatWest Markets	11	9	8,493	2.2	-0.3	33
ING	12	17	8,271	2.1	0.3	55
Bank of China Ltd	13	21	7,991	2.1	0.8	89
Societe Generale	14	16	7,847	2.0	0.2	46
Danske Bank	15	13	6,855	1.8	-0.2	56
UniCredit	16	20	6,723	1.7	0.3	37
Natixis	17	22	6,013	1.5	0.2	38
DZ Bank	18	28	5,735	1.5	0.5	19
Santander Corp & Invest Bkg	19	15	5,470	1.4	-0.5	39
SEB	20	26	5,443	1.4	0.3	49
CITIC	21	37	5,422	1.4	0.6	81
RBC Capital Markets	22	19	5,204	1.3	-0.2	33
TD Securities Inc	23	14	5,092	1.3	-0.7	29
UBS	24	23	5,019	1.3	0.0	40
China International Capital Co	25	52	4,949	1.3	1.0	56
Industry Total			**389,478**	**100.0**		**898**

**Totals are compiled in partnership with Climate Bonds Initiative; www.climatebonds.net

Global ESG Bonds By Type - Proceeds Versus Number Of Deals (US$bil)



High Yield Corporate Debt Rankings

Full Year 2022 | Debt Capital Markets | Managing Underwriters

Global High Yield Debt (B4)

YoY Change ($) -80% QoQ Change ($) -9%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh Chg	# of Deals
Goldman Sachs & Co	1	3	12,271	9.2	3.2	80
JP Morgan	2	1	11,979	9.0	-0.7	80
Morgan Stanley	3	7	9,285	7.0	2.3	60
Citi	4	6	8,395	6.3	1.3	66
BofA Securities Inc	5	2	8,304	6.2	-1.9	80
Barclays	6	4	6,021	4.5	-1.3	60
Credit Suisse	7	8	5,501	4.1	-0.2	46
Deutsche Bank	8	5	5,363	4.0	-1.2	49
Wells Fargo & Co	9	9	4,558	3.4	-0.8	47
BNP Paribas SA	10	11	4,066	3.1	-0.1	45
RBC Capital Markets	11	10	3,737	2.8	-0.6	44
HSBC Holdings PLC	12	12	2,786	2.1	-0.9	29
Mitsubishi UFJ Financial Group	13	16	2,641	2.0	0.3	33
PNC Financial Services Group	14	26	2,626	2.0	1.1	24
Truist Financial Corp	15	14	2,615	2.0	0.1	27
Mizuho Financial Group	16	13	2,445	1.8	-0.3	29
Societe Generale	17	22	2,346	1.8	0.7	22
Jefferies LLC	18	17	2,298	1.7	0.0	18
Scotiabank	19	27	1,851	1.4	0.5	21
Credit Agricole CIB	20	15	1,769	1.3	-0.5	18
BMO Capital Markets	21	18	1,713	1.3	0.0	23
Fifth Third Bancorp	22	28	1,697	1.3	0.5	18
TD Securities Inc	23	20	1,645	1.2	0.1	19
IMI - Intesa Sanpaolo	24	32	1,373	1.0	0.3	17
Sumitomo Mitsui Finl Grp Inc	25	24	1,320	1.0	0.0	13
Industry Total			**133,161**	**100.0**		**209**

Global High Yield Debt USD Denominated (B5)

YoY Change ($) -79% QoQ Change ($) -20%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh Chg	# of Deals
JP Morgan	1	1	10,193	9.6	-0.9	63
Goldman Sachs & Co	2	3	9,942	9.4	3.7	63
Morgan Stanley	3	8	8,099	7.6	2.7	47
Citi	4	4	7,684	7.3	1.7	59
BofA Securities Inc	5	2	7,670	7.2	-1.6	74
Barclays	6	5	4,729	4.5	-1.0	47
Wells Fargo & Co	7	6	4,558	4.3	-1.1	47
Credit Suisse	8	9	4,011	3.8	-0.7	36
Deutsche Bank	9	7	3,511	3.3	-1.6	30
RBC Capital Markets	10	10	2,751	2.6	-1.2	32
BNP Paribas SA	11	12	2,720	2.6	0.2	28
PNC Financial Services Group	12	21	2,626	2.5	1.4	24
Truist Financial Corp	13	11	2,615	2.5	0.1	27
Mitsubishi UFJ Financial Group	14	16	2,372	2.2	0.3	30
Mizuho Financial Group	15	13	2,284	2.2	-0.2	27
Jefferies LLC	16	15	2,174	2.1	0.0	15
HSBC Holdings PLC	17	14	2,108	2.0	-0.2	22
Fifth Third Bancorp	18	22	1,697	1.6	0.6	18
Societe Generale	19	28	1,630	1.5	0.8	12
Scotiabank	20	25	1,480	1.4	0.4	16
TD Securities Inc	21	18	1,376	1.3	0.0	16
BMO Capital Markets	22	17	1,286	1.2	-0.4	16
Sumitomo Mitsui Finl Grp Inc	23	23	1,204	1.1	0.1	11
Capital One Financial Corp	24	34	993	0.9	0.4	7
Credit Agricole CIB	25	20	992	0.9	-0.3	9
Industry Total			**105,979**	**100.0**		**141**

Top High Yield Corporate Deals

Issue Date	Issuer	Domicile Nation	Proceeds US$mil	Coupon %	Macro Sector
9/20/22	TIBCO Software Inc	United States	3,342.4	6.500	High Technology
4/27/22	Carvana Co	United States	3,275.0	10.250	Retail
1/27/22	Intelsat Jackson Holdings SA	United States	3,000.0	6.500	Telecommunications
1/27/22	Athenahealth Inc	United States	2,500.0	6.500	High Technology
1/6/22	VZ Secured Financing B.V.	Netherlands	2,357.0	5.000	Financials
1/12/22	Fertitta Entertainment LLC	United States	2,250.0	6.750	Media and Entertainment
2/3/22	McAfee Corp	United States	2,020.0	7.375	High Technology
6/1/22	Tenet Healthcare Corp	United States	2,000.0	6.125	Healthcare
9/22/22	Royal Caribbean Cruises Ltd	Liberia	2,000.0	8.250	Industrials
1/5/22	Ford Motor Credit Co	United States	2,000.0	2.300	Financials
10/18/22	Carnival Hldg (Bermuda) Ltd	United States	1,998.8	10.375	Financials
11/7/22	DISH Network Corp	United States	1,963.4	11.750	Media and Entertainment
12/8/22	Chart Industries Inc	United States	1,940.0	7.500	Industrials

Global High Yield Debt Non-USD Denominated (B6)

YoY Change ($) -81% QoQ Change ($) 50%

Bookrunner	Rank 2022	Rank 2021	Proceeds €mil	Market Share	Mkt. Sh Chg	# of Deals
Goldman Sachs & Co	1	3	2,135	8.5	1.6	19
Deutsche Bank	2	4	1,715	6.8	0.6	20
JP Morgan	3	2	1,639	6.5	-0.4	18
Credit Suisse	4	9	1,383	5.5	1.6	11
BNP Paribas SA	5	5	1,241	4.9	-1.1	18
Barclays	6	1	1,196	4.8	-2.2	14
Morgan Stanley	7	8	1,096	4.4	0.2	15
UniCredit	8	10	1,040	4.2	0.6	12
RBC Capital Markets	9	16	902	3.6	1.6	14
Credit Agricole CIB	10	11	707	2.8	-0.8	9
Societe Generale	11	14	667	2.7	0.5	11
Citi	12	12	646	2.6	-0.5	8
IMI - Intesa Sanpaolo	13	17	616	2.5	0.6	11
HSBC Holdings PLC	14	7	615	2.5	-2.8	8
Nordea	15	36	588	2.4	1.9	10
BofA Securities Inc	16	6	579	2.3	-3.5	8
Natixis	17	18	535	2.1	0.4	8
BMO Capital Markets	18	37	403	1.6	1.1	7
NatWest Markets	19	19	387	1.5	0.0	4
DNB ASA	20	42	372	1.5	1.1	9
Mediobanca	21	29	371	1.5	0.7	4
Scotiabank	22	35	348	1.4	0.8	6
Nomura	23	28	347	1.4	0.6	5
Santander Corp & Invest Bkg	24	15	334	1.3	-0.8	5
Lloyds Bank	25	24	331	1.3	0.1	3
Industry Total			**25,092**	**100.0**		**70**

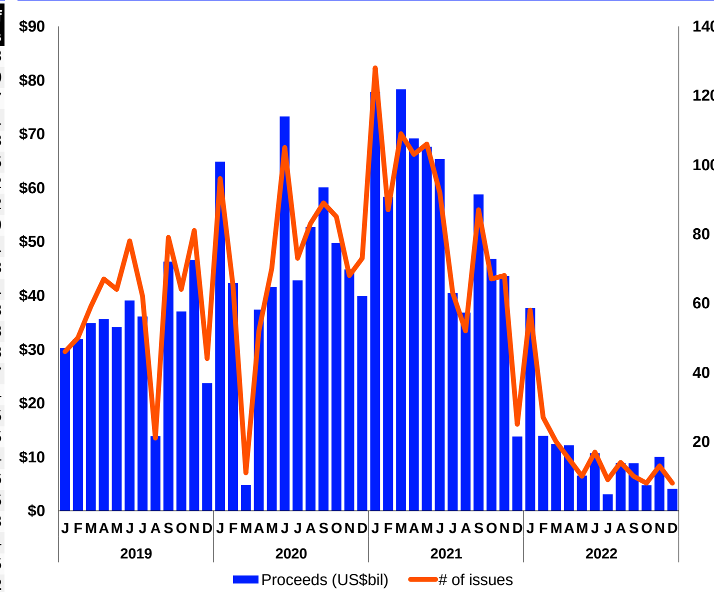
*Indicates a Tie

Global High Yield Debt EURO Denominated (B06b)

YoY Change ($) -80% QoQ Change ($) 98%

Bookrunner	Rank 2022	Rank 2021	Proceeds €mil	Market Share	Mkt. Sh Chg	# of Deals
Goldman Sachs & Co	1	2	1,853	8.9	1.4	18
Deutsche Bank	2	4	1,656	8.0	1.2	20
JP Morgan	3	1	1,564	7.5	-0.1	17
Credit Suisse	4	10	1,244	6.0	1.9	11
BNP Paribas SA	5	3	1,241	6.0	-0.8	18
Morgan Stanley	6	11	1,096	5.3	1.3	15
UniCredit	7	7	1,040	5.0	0.6	12
Barclays	8	6	839	4.0	-1.1	12
Credit Agricole CIB	9	9	707	3.4	-0.9	9
Societe Generale	10	14	667	3.2	0.6	11
Citi	11	12	646	3.1	0.0	8
IMI - Intesa Sanpaolo	12	15	616	3.0	0.8	11
BofA Securities Inc	13	5	579	2.8	-3.2	8
Natixis	14	16	535	2.6	0.5	8
Nordea	15	30	528	2.5	1.9	8
HSBC Holdings PLC	16	8	414	2.0	-2.4	7
Mediobanca	17	26	371	1.8	0.9	4
Nomura	18	25	347	1.7	0.8	5
Santander Corp & Invest Bkg	19	17	334	1.6	-0.5	5
Caisse Federale Credit Mutuel	20	34	274	1.3	0.8	4
Pareto AS	21	70	265	1.3	1.2	6
RBC Capital Markets	22	22	249	1.2	-0.1	5
Swedbank	23	-	244	1.2	1.2	3
Mitsubishi UFJ Financial Group	24	21	242	1.2	-0.2	4
DNB ASA	25	42	226	1.1	0.8	5
Industry Total			**20,834**	**100.0**		**52**

Global High Yield Corporate Debt Issuance



Emerging Markets Rankings

Full Year 2022 | Debt Capital Markets | Managing Underwriters

All International Emerging Market Bonds (L1) — YoY Change ($) -54% QoQ Change ($) 31%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
Citi	1	2	28,278	8.0	-0.1	149
JP Morgan	2	1	26,551	7.5	-1.0	128
HSBC Holdings PLC	3	3	24,287	6.9	-0.4	182
Standard Chartered PLC	4	4	14,685	4.2	-0.8	150
BNP Paribas SA	5	6	14,193	4.0	-0.5	89
BofA Securities Inc	6	5	13,201	3.7	-1.3	78
Goldman Sachs & Co	7	7	11,161	3.2	-0.7	45
Deutsche Bank	8	10	11,084	3.1	0.6	53
Credit Agricole CIB	9	9	10,319	2.9	0.2	127
Societe Generale	10	16	9,376	2.7	1.0	66
Barclays	11	11	8,214	2.3	0.3	43
Mizuho Financial Group	12	14	7,764	2.2	0.4	94
Bank of Communications Co Ltd	13	24	6,679	1.9	0.9	105
Santander Corp & Invest Bkg	14	17	6,555	1.9	0.2	25
Bank of China Ltd	15	13	6,259	1.8	-0.1	132
CITIC	16	19	5,306	1.5	0.1	196
UBS	17	15	5,139	1.5	-0.3	42
Credit Suisse	18	12	4,741	1.3	-0.7	28
Industrial Bank Co Ltd	19	35	4,455	1.3	0.6	191
China International Capital Co	20	22	4,406	1.3	0.1	158
Industry Total			**353,046**	**100.0**		**878**

EMEA Emerging Market Bonds (L2) — YoY Change ($) -48% QoQ Change ($) 142%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
Citi	1	2	9,516	13.5	1.1	30
JP Morgan	2	1	8,883	12.6	-1.7	33
Deutsche Bank	3	11	6,068	8.6	5.7	16
Goldman Sachs & Co	4	4	5,830	8.3	3.0	15
BNP Paribas SA	5	3	4,864	6.9	0.4	17
Erste Group	6	14	4,070	5.8	3.4	24
HSBC Holdings PLC	7	10	3,543	5.0	1.2	12
Societe Generale	8	7	2,928	4.2	0.2	12
ING	9	16	2,433	3.5	1.7	9
UniCredit	10	9	1,826	2.6	-1.2	15
BofA Securities Inc	11	8	1,752	2.5	-1.4	6
Santander Corp & Invest Bkg	12	36	1,386	2.0	1.6	6
Dubai Islamic Bank PJSC	13	34	1,375	2.0	1.5	2
Barclays	14	13	1,186	1.7	-0.7	6
Commerzbank AG	15	27	1,012	1.4	0.7	5
FirstRand Bank	16	29	919	1.3	0.7	4
Gazprombank	17	12	860	1.2	-1.3	2
Raiffeisen Bank International	18	15	821	1.2	-1.1	4
Nedbank Capital	19*	-	776	1.1	1.1	2
Absa Group Ltd	19*	48	776	1.1	0.9	2
Industry Total			**70,592**	**100.0**		**89**

Latin America Emerging Market Bonds (L3) — YoY Change ($) -60% QoQ Change ($) 28%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
JP Morgan	1	1	7,049	13.3	0.7	22
Citi	2	3	6,274	11.8	1.6	17
BofA Securities Inc	3	2	4,891	9.2	-1.6	18
Santander Corp & Invest Bkg	4	4	4,788	9.0	0.7	14
Barclays	5	13	3,447	6.5	4.1	8
Scotiabank	6	9	3,221	6.1	1.7	12
HSBC Holdings PLC	7	8	2,981	5.6	0.3	6
BBVA	8	11	2,606	4.9	2.0	5
Goldman Sachs & Co	9	6	2,383	4.5	-2.4	11
BNP Paribas SA	10	7	1,508	2.8	-2.6	8
Credit Agricole CIB	11	14	1,346	2.5	0.7	4
Mizuho Financial Group	12	18	1,345	2.5	1.0	9
Morgan Stanley	13	5	1,273	2.4	-4.9	14
RBC Capital Markets	14*	20	1,122	2.1	1.3	3
BMO Capital Markets	14*	22	1,122	2.1	1.3	3
Itau Unibanco	16	10	1,105	2.1	-1.0	10
Credit Suisse	17	12	831	1.6	-1.2	5
Truist Financial Corp	18	40	824	1.6	1.5	2
Natixis	19	26	756	1.4	1.0	2
Societe Generale	20	35	709	1.3	1.1	2
Industry Total			**53,027**	**100.0**		**61**

Asia Pacific Emerging Market Bonds (L4) — YoY Change ($) -51% QoQ Change ($) -32%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
HSBC Holdings PLC	1	1	12,892	6.7	-1.5	137
Citi	2	2	10,474	5.4	-0.5	90
Standard Chartered PLC	3	4	10,190	5.3	0.3	112
JP Morgan	4	3	8,580	4.4	-0.7	59
Credit Agricole CIB	5	6	8,418	4.3	0.7	117
Bank of Communications Co Ltd	6	19	6,679	3.5	1.6	105
BNP Paribas SA	7	7	6,463	3.3	-0.2	59
Bank of China Ltd	8	8	5,917	3.1	-0.4	129
BofA Securities Inc	9	5	5,613	2.9	-1.1	47
Mizuho Financial Group	10	15	5,501	2.8	0.5	74
Industry Total			**193,861**	**100.0**		**649**

Middle East Emerging Market Bonds (L5) — YoY Change ($) -62% QoQ Change ($) 393%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
Standard Chartered PLC	1	1	5,068	12.8	1.3	37
HSBC Holdings PLC	2	2	4,758	12.0	1.5	27
Citi	3	3	2,907	7.3	-2.7	14
JP Morgan	4	4	2,814	7.1	-2.5	16
Goldman Sachs & Co	5	5	1,708	4.3	-1.1	6
First Abu Dhabi Bank PJSC	6	7	1,544	3.9	0.1	14
Barclays	7	15	1,483	3.8	1.7	10
BNP Paribas SA	8	6	1,378	3.5	-0.7	6
Societe Generale	9	18	1,164	2.9	1.4	7
Industry Total			**39,575**	**100.0**		**79**

All Global Debt, by Brazilian Issuers (BR1) — YoY Change ($) -54% QoQ Change ($) 56%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
Itau Unibanco	1	1	5,623	25.0	12.2	65
Banco BTG Pactual SA	2	5	2,906	12.9	4.9	20
Banco Bradesco SA	3	3	2,759	12.3	3.7	25
Santander Corp & Invest Bkg	4	4	1,323	5.9	-2.1	19
XP Investimentos	5	14	1,054	4.7	2.5	12
UBS	6	2	983	4.4	-4.7	13
Mizuho Financial Group	7	13	877	3.9	1.7	3
Barclays	8*	11	792	3.5	1.1	2
RBC Capital Markets	8*	15*	792	3.5	1.4	2
BMO Capital Markets	8*	15*	792	3.5	1.4	2
Industry Total			**22,471**	**100.0**		**151**

Domestic Brazilian Debt, in Reals (BR2) — YoY Change ($) 34% QoQ Change ($) -26%

Bookrunner	Rank 2022	Rank 2021	Proceeds R$mil	Market Share	Mkt. Sh. Chg	# of Deals
Itau Unibanco	1	1	48,871	35.2	11.5	103
Banco Bradesco SA	2	5	26,853	19.4	9.2	42
Santander Corp & Invest Bkg	3	4	17,774	12.8	1.6	30
Banco BTG Pactual SA	4	3	17,433	12.6	0.7	25
XP Investimentos	5	10	6,454	4.7	2.4	14
UBS	6	2	6,392	4.6	-10.5	16
Caixa Economica Federal	7	14	3,945	2.8	2.2	7
Arab Banking Corporation	8	11	2,363	1.7	-0.4	5
Banco Safra SA	9	7	2,230	1.6	-2.5	9
Banco Votorantim	10	9	1,565	1.1	-1.6	9
Industry Total			**138,746**	**100.0**		**247**

*Indicates a Tie

Global Debt, Mexican Issuers (MX1) — YoY Change ($) -46% QoQ Change ($) -28%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
BBVA	1	1	4,765	20.3	8.9	61
Santander Corp & Invest Bkg	2	3	3,737	16.0	6.1	35
BofA Securities Inc	3	4	2,273	9.7	2.3	5
Barclays	4	12	2,109	9.0	4.9	4
Casa de Bolsa Inverlat	5	9	1,787	7.6	3.0	38
JP Morgan	6	5	1,082	4.6	-2.2	4
Citi	7	2	791	3.4	-7.0	11
Casas de Bolsa Bital, S.A.	8	15	779	3.3	1.3	19
Morgan Stanley	9	8	614	2.6	-2.7	7
Scotiabank	10	28	542	2.3	1.9	3
Industry Total			**23,422**	**100.0**		**134**

Domestic Mexican Debt (MX3) — YoY Change ($) -30% QoQ Change ($) 25%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh. Chg	# of Deals
BBVA	1	1	2,628	27.5	5.5	59
Santander Corp & Invest Bkg	2	2	2,182	22.8	5.7	35
Casa de Bolsa Inverlat	3	3	1,787	18.7	3.5	38
Casas de Bolsa Bital, S.A.	4	6	779	8.2	-0.8	19
Citi	5	5	499	5.2	-4.6	9
Grupo Financiero Banorte-Ixe	6	4	462	4.8	-9.2	28
Grupo Financiero Inbursa SA	7	15*	300	3.1	2.7	2
Corporacion Actinver Sab de CV	8	7	174	1.8	-1.8	19
Multibanco Comermex SNC	9	8	164	1.7	-0.6	4
Vector Casa de Bolsa SA de CV	10	12	151	1.6	0.8	21
Industry Total			**9,554**	**100.0**		**121**

Asia-Pacific Rankings

Full Year 2022 | Debt Capital Markets | Managing Underwriters

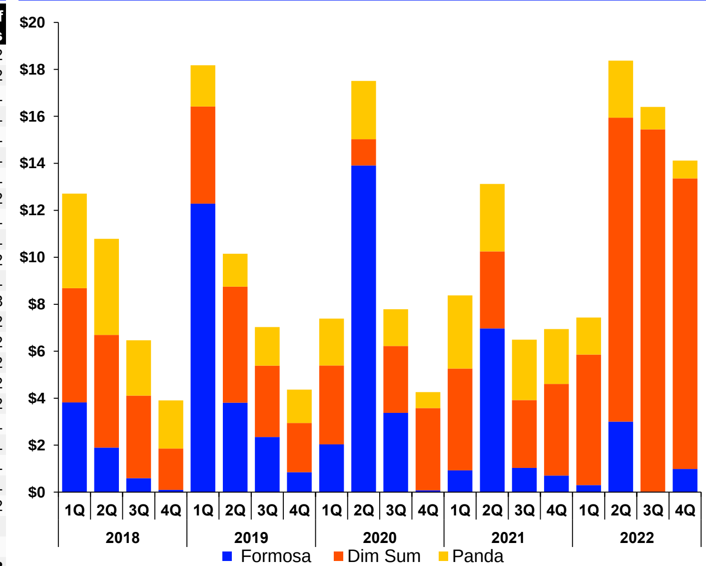
Asian G3 Bonds (ex-Japan & Australia) (AR2) YoY Change ($) -50% QoQ Change ($) -65%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh Chg	# of Deals
Citi	1	2	13,034	7.0	0.4	88
HSBC Holdings PLC	2	1	10,316	5.5	-2.2	83
Standard Chartered PLC	3	4	9,732	5.2	0.4	99
JP Morgan	4	3	9,359	5.0	-0.6	52
BofA Securities Inc	5	5	8,013	4.3	0.2	50
Credit Agricole CIB	6	6	7,735	4.1	0.5	86
BNP Paribas SA	7	7	7,406	4.0	0.6	55
Deutsche Bank	8	9	6,544	3.5	0.4	30
Morgan Stanley	9	10	5,074	2.7	-0.4	33
CITIC	10	13	4,719	2.5	-0.2	174
Goldman Sachs & Co	11	12	4,534	2.4	-0.3	17
Mizuho Financial Group	12	17	4,508	2.4	0.3	58
Bank of China Ltd	13	8	4,281	2.3	-0.9	107
Industrial Bank Co Ltd	14	28	3,898	2.1	0.8	159
China International Capital Co	15	15	3,752	2.0	-0.3	135
DBS Group Holdings	16	14	3,436	1.8	-0.6	59
Societe Generale	17	25	3,434	1.8	0.4	33
UBS	18	11	3,350	1.8	-1.0	29
Credit Suisse	19	16	2,760	1.5	-0.6	17
Nomura	20	34	2,675	1.4	0.6	20
Sumitomo Mitsui Finl Grp Inc	21	31	2,602	1.4	0.4	36
Bank of Communications Co Ltd	22	20	2,551	1.4	-0.3	80
Haitong Securities Co Ltd	23	27	2,533	1.4	0.1	121
ICBC	24	18	2,524	1.4	-0.6	77
China Merchants Bank	25	22	2,443	1.3	-0.1	85
Industry Total			**187,545**	**100.0**		**473**

Asian G3 High Yield Bonds (ex Japan & Australia) (AR10) YoY Change ($) -94% QoQ Change ($) 100%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh Chg	# of Deals
Deutsche Bank	1	1	275	12.2	5.2	2
Barclays	2	13	198	8.8	6.5	2
DBS Group Holdings	3*	23	188	8.3	7.0	1
JP Morgan	3*	8	188	8.3	3.7	1
Arctic Securities ASA	5*	-	150	6.7	6.7	1
Pareto AS	5*	-	150	6.7	6.7	1
Goldman Sachs & Co	5*	25	150	6.7	5.5	1
Bank of Communications Co Ltd	8	16	98	4.4	2.2	2
ICBC	9*	28	88	3.9	3.1	1
Bank of China Ltd	9*	17	88	3.9	1.9	1
HSBC Holdings PLC	11	2	83	3.7	-2.8	2
Credit Suisse	12	7	72	3.2	-1.4	1
CITIC	13	3	47	2.1	-4.2	3
Shanghai Pudong Development Bk	14	48	40	1.8	1.5	2
China International Capital Co	15*	10	36	1.6	-1.9	2
Industrial Bank Co Ltd	15*	35	36	1.6	1.1	2
China Industrial Sec Intl	15*	82	36	1.6	1.5	2
Shenwan Hongyuan Securities Co	15*	58	36	1.6	1.4	2
China Minsheng Banking Corp	19*	19	30	1.3	-0.7	1
China Everbright Bank	19*	61	30	1.3	1.1	1
BOSC International Co Ltd	19*	44	30	1.3	1.0	1
Cntrl Wealth Sec Invest Ltd	19*	31	30	1.3	0.6	1
Huatai Securities Co Ltd	23	41	17	0.7	0.3	2
Industry Total			**2,250**	**100.0**		**8**

Dim Sum, Panda and Formosa Bond Issuance (ex self-funded) (US$mil)

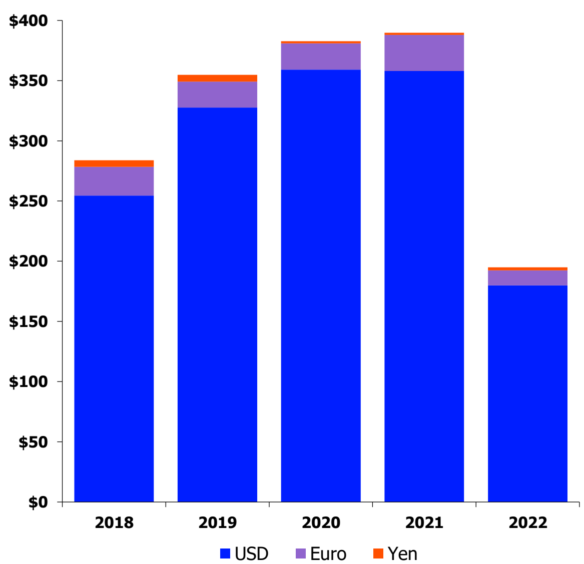


All Asian Currencies (ex Japan & Australia) (AS1) YoY Change ($) 4% QoQ Change ($) -7%

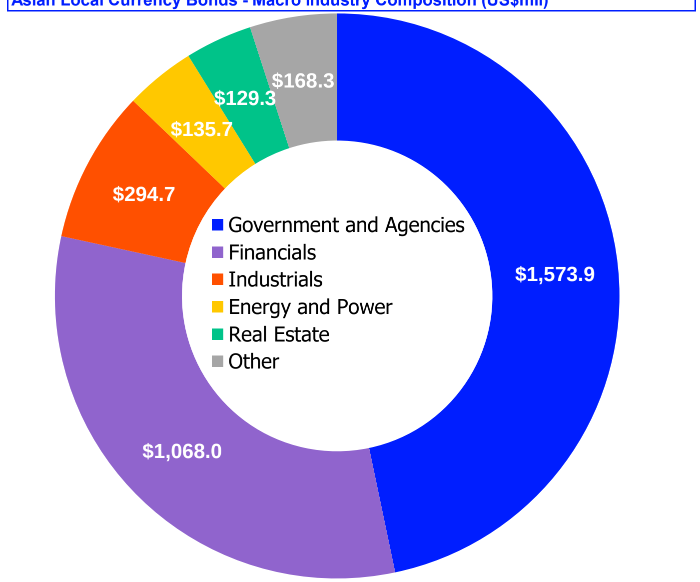
Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh Chg	# of Deals
CITIC	1	1	217,103	6.4	-0.1	3,128
Bank of China Ltd	2	2	182,099	5.4	-0.5	2,749
ICBC	3	3	176,571	5.2	-0.4	2,595
China Construction Bank	4	4	160,369	4.8	-0.3	2,659
Agricultural Bank of China	5	6	149,564	4.4	-0.3	2,417
China Securities Co Ltd	6	5	147,274	4.4	-0.6	2,185
Bank of Communications Co Ltd	7	7	137,276	4.1	-0.1	2,236
Huatai Securities Co Ltd	8	8	120,523	3.6	0.4	2,102
China International Capital Co	9	11	113,312	3.4	1.0	1,883
Guotai Junan Securities	10	10	94,938	2.8	0.0	1,456
Industrial Bank Co Ltd	11	9	87,135	2.6	-0.5	1,515
China Merchants Bank	12	12	76,873	2.3	0.1	1,110
Shanghai Pudong Development Bk	13	15	50,429	1.5	0.0	925
Orient Securities Co Ltd	14	17	49,509	1.5	0.0	699
Everbright Securities Co Ltd	15	19	45,966	1.4	0.1	1,093
Postal Savings Bank Of China	16	14	45,723	1.4	-0.3	736
Haitong Securities Co Ltd	17	13	41,152	1.2	-0.9	726
China Minsheng Banking Corp	18	18	40,179	1.2	-0.2	678
China Galaxy Securities Co	19	24	39,939	1.2	0.4	782
China Merchants Securities Co	20	16	38,460	1.1	-0.4	362
China Everbright Bank	21	26	37,496	1.1	0.3	500
Shenwan Hongyuan Securities Co	22	20	37,489	1.1	0.0	526
China Dvlp Bank Sec Co Ltd	23	43	36,545	1.1	0.6	736
HSBC Holdings PLC	24	28	33,203	1.0	0.4	405
Bank of Beijing	25	34	29,373	0.9	0.3	355
Industry Total			**3,369,846**	**100.0**		**15,326**

*Indicates a Tie

Asian G3 Bond Volume - Currency (US$mil)



Asian Local Currency Bonds - Macro Industry Composition (US$mil)



Australia & China Rankings

Full Year 2022 | Debt Capital Markets | Managing Underwriters

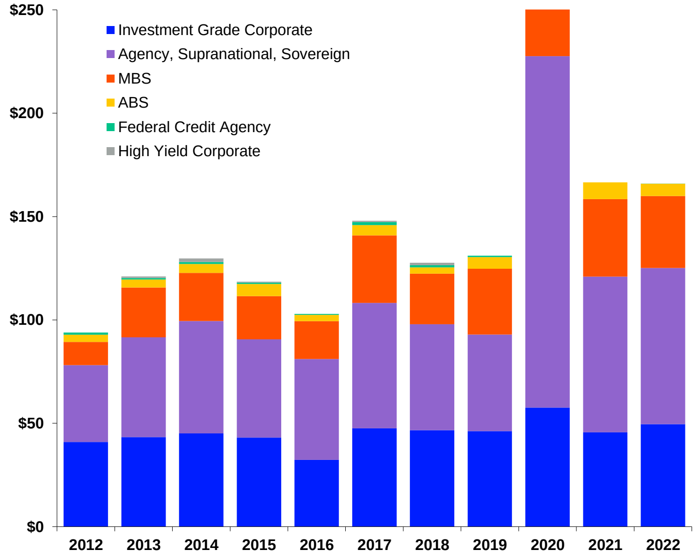
All Australian Debt (ex self-funded) (AJ3a) YoY Change ($) 0% QoQ Change ($) 20%

Bookrunner	Rank 2022	Rank 2021	Proceeds AU$mil	Market Share	Mkt. Sh Chg	# of Deals
National Australia Bank	1	2	25,761	15.5	0.8	111
Commonwealth Bank of Australia	2	3	21,786	13.1	-0.6	90
Westpac Banking	3	1	21,629	13.0	-1.8	108
ANZ Banking Group	4	4	20,897	12.6	-0.9	87
UBS	5	5	12,914	7.8	0.6	37
Deutsche Bank	6	6	9,927	6.0	-0.9	38
JP Morgan	7	12	7,868	4.7	3.0	30
RBC Capital Markets	8	7	6,491	3.9	0.1	47
Nomura	9	9	5,279	3.2	0.6	36
TD Securities Inc	10	8	4,891	3.0	-0.5	37
Macquarie Group	11	11	2,213	1.3	-0.9	15
Citi	12	10	2,153	1.3	-1.1	17
Standard Chartered PLC	13	13	2,148	1.3	-0.3	16
BofA Securities Inc	14	14	2,145	1.3	-0.3	10
United Overseas Bank Ltd	15	26	2,140	1.3	1.1	12
Barclays	16	38	2,119	1.3	1.2	20
Sumitomo Mitsui Finl Grp Inc	17	15	1,973	1.2	-0.3	9
Natixis	18	19	1,317	0.8	-0.2	10
Mizuho Financial Group	19	17	1,172	0.7	-0.3	11
DBS Group Holdings	20	-	1,133	0.7	0.7	5
Industry Total			**165,977**	**100.0**		**284**

All Australian International Bonds (AJ7) YoY Change ($) 24% QoQ Change ($) 65%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh Chg	# of Deals
Citi	1	1	7,785	10.9	-3.1	22
BofA Securities Inc	2	4	6,491	9.1	1.8	18
HSBC Holdings PLC	3	2	5,935	8.3	-1.9	25
JP Morgan	4	3	5,245	7.3	-1.3	12
Commonwealth Bank of Australia	5	10	3,651	5.1	1.6	11
RBC Capital Markets	6	12	3,464	4.8	1.5	10
National Australia Bank	7	13	3,378	4.7	1.9	11
Westpac Banking	8	5	3,068	4.3	-1.3	10
Societe Generale	9	23	2,958	4.1	3.3	16
BNP Paribas SA	10	7	2,831	4.0	-1.1	12
ANZ Banking Group	11	25	2,733	3.8	3.3	10
UBS	12	11	2,693	3.8	0.4	12
Barclays	13	16	2,573	3.6	1.2	11
TD Securities Inc	14	9	2,338	3.3	-0.9	8
Goldman Sachs & Co	15	6	2,158	3.0	-2.3	8
Morgan Stanley	16	8	1,743	2.4	-2.1	5
Credit Suisse	17	18	1,450	2.0	-0.2	6
Deutsche Bank	18	15	1,296	1.8	-0.8	6
NatWest Markets	19	21	1,227	1.7	0.5	5
Macquarie Group	20	14	1,126	1.6	-1.0	7
Industry Total			**71,675**	**100.0**		**92**

All Australian Debt - Issue Type Composition (AU$mil)



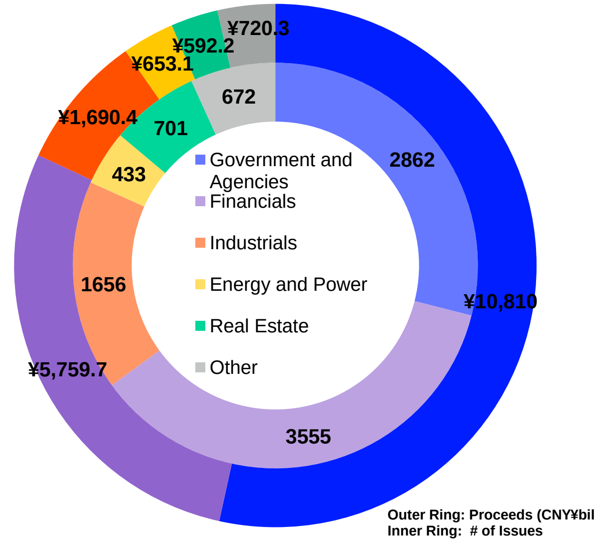
China G3 Currency Bonds (AR5) YoY Change ($) -57% QoQ Change ($) -50%

Bookrunner	Rank 2022	Rank 2021	Proceeds US$mil	Market Share	Mkt. Sh Chg	# of Deals
CITIC	1	1	3,858	5.9	1.1	152
Industrial Bank Co Ltd	2	16	3,506	5.4	2.9	148
China International Capital Co	3	3	3,242	5.0	0.4	119
Bank of China Ltd	4	2	2,653	4.1	-0.7	83
Credit Agricole CIB	5	18	2,396	3.7	1.3	40
Haitong Securities Co Ltd	6	17	2,165	3.3	0.9	106
Guotai Junan Securities	7	8	2,103	3.2	0.0	90
Citi	8	7	2,086	3.2	-0.1	29
China Merchants Bank	9	14	1,973	3.0	0.5	70
China Minsheng Banking Corp	10	15	1,948	3.0	0.5	78
Standard Chartered PLC	11	9	1,860	2.8	-0.3	43
ICBC	12	6	1,822	2.8	-0.8	59
Bank of Communications Co Ltd	13	10	1,822	2.8	-0.2	60
Shanghai Pudong Development Bk	14	20	1,790	2.7	0.4	75
China Construction Bank	15	19	1,728	2.6	0.2	44
Agricultural Bank of China	16	23	1,704	2.6	0.7	58
HSBC Holdings PLC	17	4	1,311	2.0	-2.4	31
China Everbright Bank	18	27	1,180	1.8	0.3	45
China Securities Co Ltd	19	30	1,171	1.8	0.7	46
DBS Group Holdings	20	26	1,147	1.8	0.3	34
Industry Total			**65,462**	**100.0**		**274**

Chinese Yuan Bonds (ex-Self Funded) (AS24) YoY Change ($) 10% QoQ Change ($) 1%

Bookrunner	Rank 2022	Rank 2021	Proceeds CN¥mil	Market Share	Mkt. Sh Chg	# of Deals
CITIC	1	1	1,453,497	7.2	6.6	3,123
Bank of China Ltd	2	2	1,184,974	5.9	5.0	2,738
ICBC	3	3	1,181,059	5.8	5.5	2,590
China Construction Bank	4	4	1,068,981	5.3	5.0	2,653
Agricultural Bank of China	5	6	1,000,363	5.0	4.4	2,413
China Securities Co Ltd	6	5	985,886	4.9	4.3	2,185
Bank of Communications Co Ltd	7	7	917,992	4.5	4.1	2,232
Huatai Securities Co Ltd	8	8	808,876	4.0	3.5	2,102
China International Capital Co	9	11	761,980	3.8	3.6	1,881
Guotai Junan Securities	10	10	636,486	3.2	3.0	1,455
Industrial Bank Co Ltd	11	9	583,209	2.9	2.6	1,512
China Merchants Bank	12	12	515,304	2.6	2.2	1,107
Shanghai Pudong Development Bk	13	15	338,315	1.7	1.4	922
Orient Securities Co Ltd	14	17	331,476	1.6	1.2	699
Everbright Securities Co Ltd	15	19	309,209	1.5	1.3	1,093
Postal Savings Bank Of China	16	14	307,763	1.5	1.0	736
Haitong Securities Co Ltd	17	13	272,866	1.4	0.8	726
China Minsheng Banking Corp	18	18	268,875	1.3	1.0	676
China Galaxy Securities Co	19	22	268,190	1.3	1.1	782
China Merchants Securities Co	20	16	260,611	1.3	1.1	362
Industry Total			**20,225,844**	**100.0**		**9,879**

Chinese Yuan Bonds - Macro Industry Composition



Outer Ring: Proceeds (CNY¥bil)
Inner Ring: # of Issues

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Japan Rankings

Full Year 2022 | Debt Capital Markets | Managing Underwriters

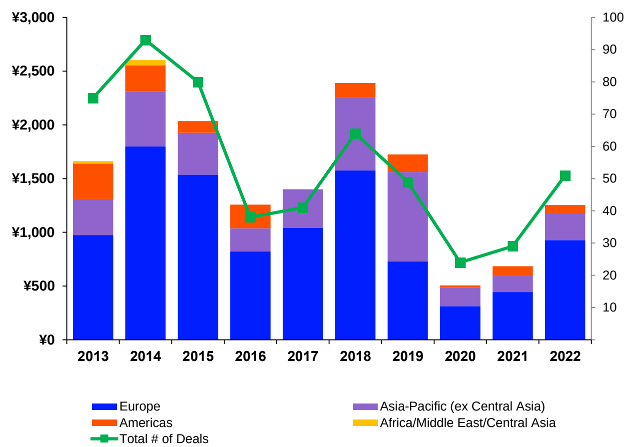
All Bonds in Yen (AP05) YoY Change (¥) -16% QoQ Change (¥) 18%

Lead Manager	Rank 2022	Rank 2021	Proceeds JPY¥bil	Market Share	Mkt. Sh. Chg	# of Deals
Mizuho Financial Group	1	1	5,662	25.1	2.5	793
Nomura	2	2	4,528	20.1	3.0	695
Daiwa Securities Group Inc	3	5	3,805	16.9	1.4	586
Mitsubishi UFJ Morgan Stanley	4	3	3,368	15.0	-1.8	518
Sumitomo Mitsui Finl Grp Inc	5	4	1,698	7.5	-8.3	208
Mitsubishi UFJ Financial Group	6	8	538	2.4	0.8	35
Tokai Tokyo Financial Holdings	7	9	385	1.7	0.7	131
Goldman Sachs & Co	8	7	357	1.6	0.0	54
Sumitomo Mitsui Trust Holdings	9	6	312	1.4	-1.0	36
Barclays	10	11	240	1.1	0.2	22
BofA Securities Inc	11	10	227	1.0	0.0	21
Norinchukin Bank	12	15	221	1.0	0.6	9
Societe Generale	13	23	193	0.9	0.8	8
SBI Holdings Inc	14	12	176	0.8	0.3	18
Shinkin Central Bank	15	14	166	0.7	0.3	63
Industry Total			**22,521**	**100.0**		**1,262**

Samurai Bonds (AP01) YoY Change (¥) 83% QoQ Change (¥) 53%

Lead Manager	Rank 2022	Rank 2021	Proceeds JPY¥bil	Market Share	Mkt. Sh. Chg	# of Deals
Sumitomo Mitsui Finl Grp Inc	1	1	385	30.7	-11.9	28
Nomura	2*	2	214	17.1	0.3	41
Mizuho Financial Group	2*	3	214	17.1	3.9	41
Mitsubishi UFJ Morgan Stanley	4	5	213	17.0	9.5	33
Daiwa Securities Group Inc	5	4	151	12.0	-0.5	30
Natixis	6	6	43	3.4	-1.6	12
HSBC Holdings PLC	7	-	19	1.5	1.5	4
Credit Agricole CIB	8	7	16	1.3	-1.2	4
Industry Total			**1,253**	**100.0**		**51**

Samurai Bonds Issuance - Domicile Region (JP¥bil)



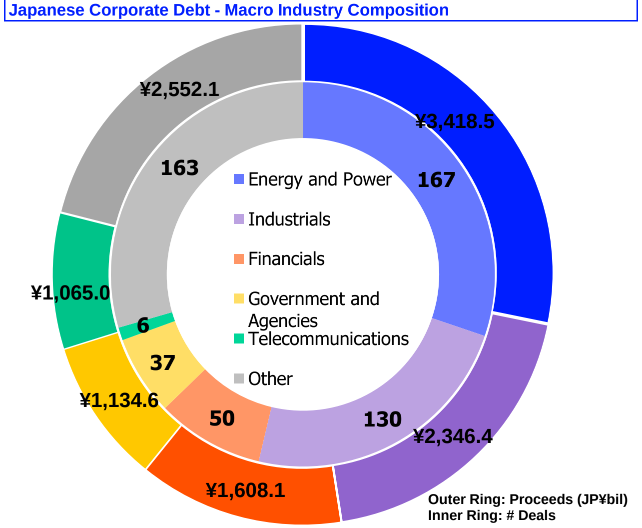
Japanese Securitizations (AP02) YoY Change (¥) -23% QoQ Change (¥) -16%

Lead Manager	Rank 2022	Rank 2021	Proceeds JPY¥bil	Market Share	Mkt. Sh. Chg	# of Deals
Mizuho Financial Group	1	1	1,233	29.9	1.6	159
Mitsubishi UFJ Financial Group	2	7	502	12.2	5.8	33
Nomura	3	6	422	10.3	2.8	14
Mitsubishi UFJ Morgan Stanley	4	2	343	8.3	-4.4	11
Sumitomo Mitsui Trust Holdings	5	3	312	7.6	-4.2	36
Daiwa Securities Group Inc	6	5	282	6.9	-2.2	10
Sumitomo Mitsui Finl Grp Inc	7	4	254	6.2	-5.6	29
Norinchukin Bank	8	10	221	5.4	3.3	9
Barclays	9	9	179	4.3	1.5	8
Goldman Sachs & Co	10	8	112	2.7	-0.2	4
BofA Securities Inc	11	12	90	2.2	0.3	3
BNP Paribas SA	12	11	73	1.8	-0.3	13
Resona Holdings Inc	13	14	43	1.0	0.9	1
Shizuoka Bank Ltd	14	-	40	1.0	1.0	1
Shinsei Bank	15	-	8	0.2	0.2	2
Industry Total			**4,122**	**100.0**		**284**

Japanese Corporate Debt (AP03) YoY Change (¥) -20% QoQ Change (¥) 20%

Lead Manager	Rank 2022	Rank 2021	Proceeds JPY¥bil	Market Share	Mkt. Sh. Chg	# of Deals
Mizuho Financial Group	1	1	3,359	27.7	4.5	433
Nomura	2	2	2,687	22.2	2.2	426
Daiwa Securities Group Inc	3	4	2,588	21.4	3.0	374
Mitsubishi UFJ Morgan Stanley	4	3	2,102	17.3	-1.2	309
Sumitomo Mitsui Finl Grp Inc	5	5	654	5.4	-10.1	74
Tokai Tokyo Financial Holdings	6	7	213	1.8	1.0	86
SBI Holdings Inc	7	6	166	1.4	0.5	14
Shinkin Central Bank	8	10	145	1.2	0.6	57
Goldman Sachs & Co	9	9	50	0.4	-0.3	21
Okasan Securities Group Inc	10	12	49	0.4	0.1	30
Rakuten Securities Inc	11	-	43	0.4	0.4	2
Citi	12	11	37	0.3	0.0	10
BofA Securities Inc	13	8	23	0.2	-0.5	14
Barclays	14	13	5	0.0	-0.1	2
Aozora Bank Ltd	15	14	4	0.0	-0.1	1
Industry Total			**12,125**	**100.0**		**553**

Japanese Corporate Debt - Macro Industry Composition



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Debt Capital Markets Criteria

Full Year 2022 | Managing Underwriters

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Database coverage includes all US public, Euro public and Rule 144a fee-eligible global debt transactions (including Global bonds, Euro/144a transactions, Yankee Bonds, Eurobonds, Foreign Bonds and preferred stock) as well as MBS, ABS & Taxable Munis.

Transactions must be received within 5 business days of pricing for league table accreditation. (Rule 144a transactions sold exclusively in the US market, MBS, ABS transactions in all markets and all Federal Credit Agency transactions must be received within 5 business days of settlement.) Transactions not received by the applicable deadline are entered into the database but classified as rank ineligible and are not included in league tables for the current calendar year.

All league tables are based on deal proceeds (total issue amount multiplied by the issue price) unless otherwise stated; and current data and previous year's data is as of 9:00am EST on December 30, 2022.

Full credit is given to the bookrunner, equal if joint books. In cases of underwriter consolidation, credit is given to the surviving/parent firm. Non-US dollar denominated transactions are converted to the US dollar equivalent at the time of announcement.

Long-term league tables exclude deals with a minimum life of less than 1.5 years (or 18 months), except for Asian local currency denominated bonds and all securitized tranches, which require a minimum life of more than 360 days. Minimum life is defined as the difference between the settlement date and the earliest maturity date or first call/put option.

US marketplace league tables include US dollar denominated domestic, Yankee, Global and Euro/144a bond and preferred stock transactions. Global bond league tables include domestic, foreign, Global, Euromarket and Euro/144a bond and preferred stock transactions issued in any currency.
League table volumes for Mitsubishi UFJ Financial Group and Morgan Stanley, included herein, reflect changes after the commencement of their jointly established securities firms in Japan: (1) Mitsubishi UFJ Morgan Stanley Securities and (2) Morgan Stanley MUFG Securities. Credit for the newly established joint ventures rolls up to Morgan Stanley. For Japanese involvement league tables Morgan Stanley will be represented as "Mitsubishi UFJ Morgan Stanley."

League table volumes for Huaxin Securities and Morgan Stanley, included herein, reflect changes after the commencement of their jointly established securities firm in China: Morgan Stanley Huaxin Securities. Credit for the newly established joint ventures rolls up to Morgan Stanley. For Chinese involvement league tables Morgan Stanley will be represented as "Morgan Stanley Huaxin Securities".

As concluded following our 2014 DCM Roundtable in Tokyo, Refinitiv will begin publishing domestic Japanese rankings on an "Anbun Hoshiki" (Proportional) basis beginning with Japanese Fiscal Year 2014 - 2015 after April 1st, 2014. Please note that the Samurai Bonds ranking (AP1) will be consistent with all other international bonds rankings and will remain on the "Equal-to-Each" allocation basis.
Following our mid-year League Table Inquiry, all 2014 US mortgage-related securitizations have been classified as mortgage backed regardless of risk category or deal structure.

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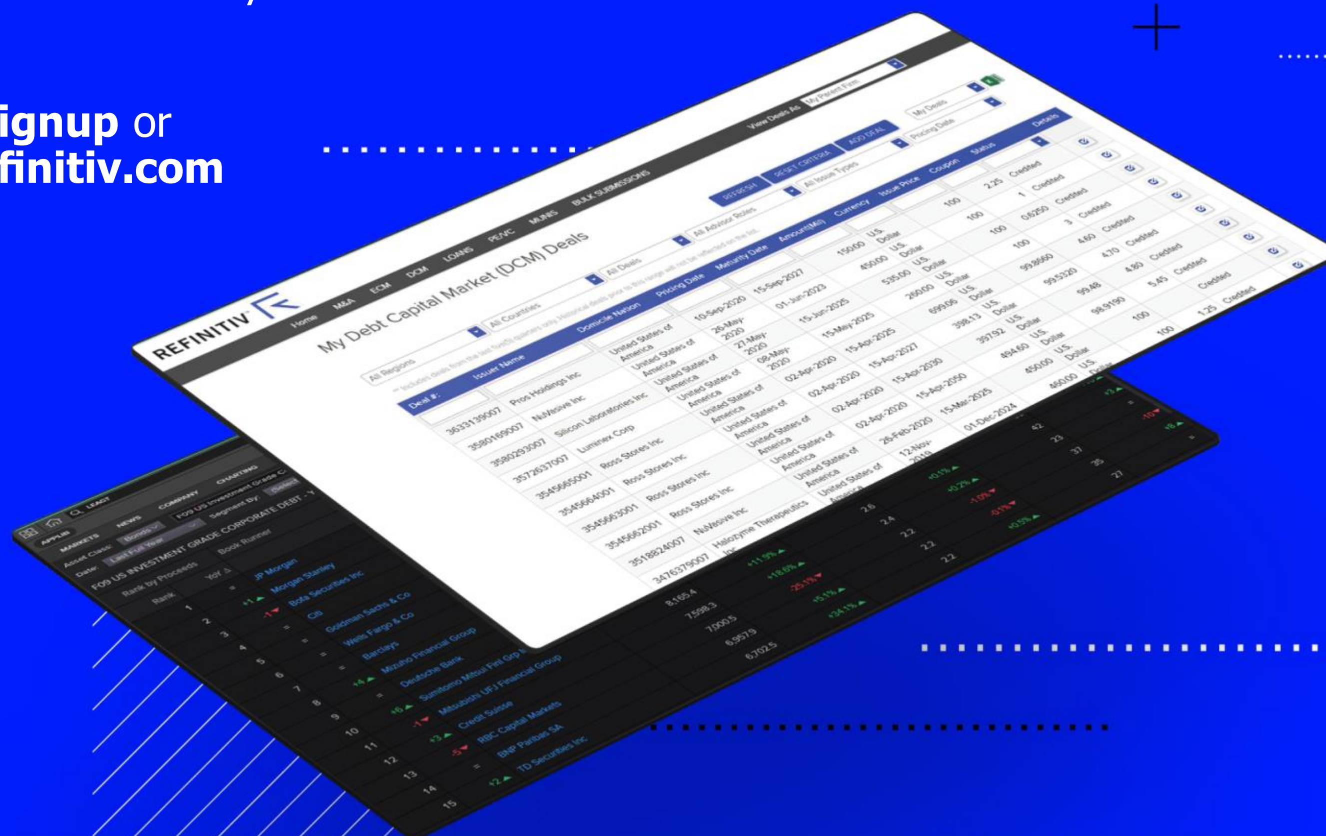

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