

Default, Transition, and Recovery:

2024 Annual Global Corporate Default And Rating Transition Study

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(Editor's Note: The issue credit ratings included in this study are classified by the geographic location in which each entity is incorporated (see regional definitions in Appendix I).)

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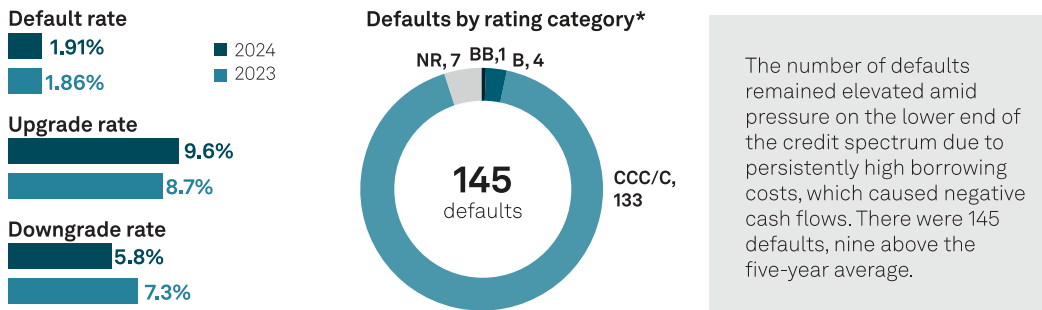
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Key Takeaways

- The number of global corporate defaults ticked lower in 2024, to 145 from 153 in 2023. Nearly 60% of the defaults in 2024 were distressed exchanges.
- The consumer/service sector led the global default tally for a fourth straight year, accounting for nearly 25% of defaults last year.
- Of the defaulters in 2024 that were rated at the start of the year, all but one (a confidentially rated issuer) were speculative grade, and 91.7% were rated 'CCC+' or below prior to default.
- Even though defaults were elevated, credit quality broadly improved last year. More issuers were upgraded (9.6%) than downgraded (5.8%), while the one-year global Gini ratio (a measure of ratings performance) dipped marginally by 0.8 percentage points from the previous year, to 89.4%.

2024 global corporate default and transition study snapshot



*Shows rating one year prior to default. NR--Not rated. Source: S&P Global Ratings. Copyright © 2025 by Standard & Poor's Financial Services LLC. All rights reserved.

While the number of defaults fell slightly in 2024 (to 145, from 153 in 2023), the number remained elevated--largely because of distressed exchanges. The number of distressed exchanges rose to its highest level since 2008, accounting for 59.3% of defaults. (We view an exchange of one or more of an issuer's financial obligations as tantamount to default if the issuer is distressed and the transaction offers investors materially less than the original promise of the debt.)

One reason for the rising percentage of distressed exchanges and the high level of repeat defaulters is the desire of financial sponsors to maintain control of their portfolio firms while attempting to reduce debt.

And while the global economy proved stronger than expected in 2024 (giving some entities easier access to capital), persistently high interest rates also contributed to lower-rated companies' use of distressed exchanges to ease near-term debt burdens and financing costs amid weaker cash flows.

With the number of defaults remaining elevated, the global speculative-grade ('BB+' or lower) default rate rose to 3.9% in 2024 from 3.7% in 2023 (see chart 1 and table 1).

High interest rates and stubborn inflation have depleted consumer savings and lowered discretionary income, particularly for lower-income consumers. The consumer/service sector led the default tally for the fourth straight year with 33 defaults in 2024, while the leisure time/media sector had the highest default rate (4.89%).

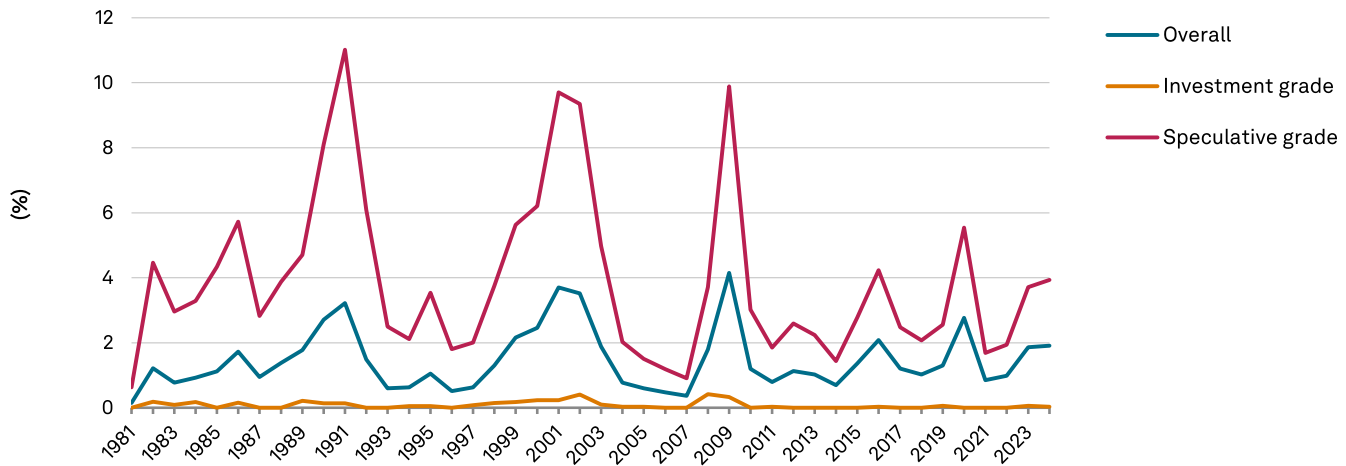
The U.S. led defaults by region with 97, followed by Europe (33), emerging markets (12), and other developed markets (3).

Even though defaults remained elevated, other measures of credit quality improved in 2024. The downgrade rate fell in 2024, while the upgrade rate increased. This caused the downgrade/upgrade ratio to fall to 0.61 from 0.82 in 2023.

Much of the credit pressure we saw in 2024 was concentrated among the lowest-rated issuers. Of the 130 defaulters in 2024 that were rated at the start of the year, 97 (or about three-fourths) were rated in the 'CCC'/'C' category.

Chart 1

Global default rates: Investment grade versus speculative grade



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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This default and rating transition study includes industrials, utilities, financial institutions (banks, brokerages, asset managers, and other financial entities), and insurance companies globally with long-term local currency ratings from S&P Global Ratings. We calculated all default rates on an issuer-weighted basis. The default rates that we refer to as weighted averages in this study use the number of issuers at the beginning of each year as the basis for each year's weight. (For a detailed explanation of our data sources and methodology, see Appendix I.)

Table 1

Global corporate default summary

	Total defaults (no.)*	Investment-grade defaults (no.)	Speculative-grade defaults (no.)	Default rate (%)	Investment-grade default rate (%)	Speculative-grade default rate (%)	Total debt outstanding (bil. \$)
1981	2	0	2	0.15	0.00	0.63	0.06
1982	18	2	15	1.22	0.19	4.46	0.90
1983	12	1	10	0.77	0.09	2.96	0.37
1984	14	2	12	0.93	0.17	3.29	0.36
1985	19	0	18	1.12	0.00	4.34	0.31
1986	34	2	30	1.73	0.15	5.73	0.46
1987	19	0	19	0.94	0.00	2.82	1.60
1988	32	0	29	1.38	0.00	3.88	3.30
1989	44	3	35	1.77	0.21	4.70	7.28
1990	70	2	56	2.71	0.14	8.10	21.15
1991	93	2	65	3.22	0.13	11.02	23.65
1992	39	0	32	1.49	0.00	6.10	5.40

Table 1

Global corporate default summary (cont.)

	Total defaults (no.)*	Investment-grade defaults (no.)	Speculative-grade defaults (no.)	Default rate (%)	Investment-grade default rate (%)	Speculative-grade default rate (%)	Total debt outstanding (bil. \$)
1993	26	0	14	0.60	0.00	2.50	2.38
1994	21	1	15	0.62	0.05	2.12	2.30
1995	35	1	29	1.05	0.05	3.54	8.97
1996	20	0	16	0.51	0.00	1.81	2.65
1997	23	2	20	0.63	0.08	2.01	4.93
1998	57	4	49	1.30	0.14	3.75	11.27
1999	110	5	93	2.16	0.17	5.63	39.38
2000	136	7	109	2.46	0.24	6.21	43.28
2001	230	7	172	3.70	0.23	9.70	118.79
2002	226	13	159	3.52	0.41	9.35	190.92
2003	120	3	89	1.88	0.10	4.97	62.89
2004	56	1	38	0.77	0.03	2.02	20.66
2005	40	1	31	0.60	0.03	1.50	42.00
2006	30	0	26	0.47	0.00	1.18	7.13
2007	24	0	21	0.37	0.00	0.91	8.15
2008	127	14	89	1.79	0.42	3.71	429.63
2009	268	11	223	4.15	0.33	9.89	627.70
2010	83	0	64	1.20	0.00	3.02	97.48
2011	53	1	44	0.80	0.03	1.85	84.30
2012	83	0	66	1.13	0.00	2.59	86.70
2013	81	0	62	1.02	0.00	2.23	97.29
2014	60	0	45	0.69	0.00	1.44	91.55
2015	113	0	94	1.36	0.00	2.77	110.31
2016	163	1	143	2.08	0.03	4.23	239.79
2017	95	0	83	1.21	0.00	2.47	104.57
2018	82	0	71	1.02	0.00	2.07	131.65
2019	118	2	92	1.31	0.06	2.55	183.21
2020	225	0	198	2.76	0.00	5.54	353.43
2021	72	0	60	0.85	0.00	1.68	66.28
2022	85	0	71	0.99	0.00	1.94	106.98
2023	153	2	128	1.86	0.06	3.71	222.44
2024	145	1	129	1.91	0.03	3.94	227.41

*Column data includes companies that were no longer rated one year prior to default. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

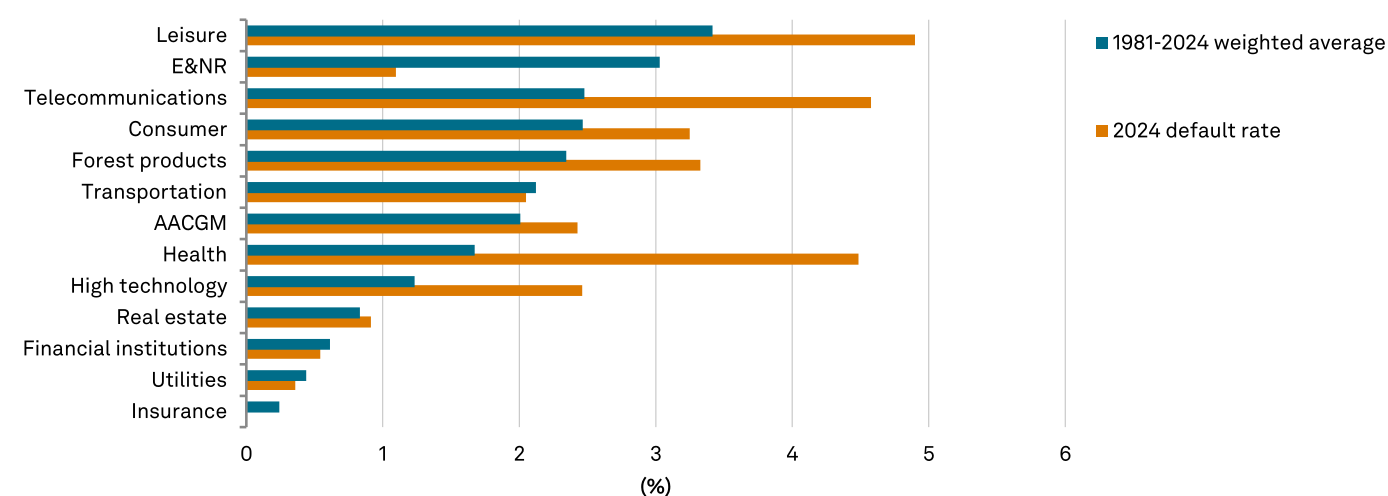
Default trends varied across sectors in 2024, with half of the 12 sectors seeing increasing default

rates while the other six saw declining default rates. (This excludes the insurance sector, since there were no defaults in the sector in either 2023 or 2024). However, divergences in credit quality by sector became apparent as the number of defaults increased in a few sectors: Forest and building products/homebuilders, high technology/computers/office equipment, real estate, and telecommunications each saw more defaults than in 2023.

Each of these sectors also had a default rate in 2024 that was above the sector's long-term average. Some of the sectors that saw above-average default rates (like leisure time/media and consumer/service) are exposed to shifting consumer spending and preferences, and some (like health care) were especially challenged by higher costs for labor and other business inputs (see chart 2).

Chart 2

Global corporate default rates by industry: 2024 versus long-term



Leisure--Leisure time/media. High technology--High technology/computers/office equipment. Health--Health care/chemicals. Forest products--Forest and building products/homebuilders. E&NR--Energy and natural resources. Consumer--Consumer/service sector. AACGM--Aerospace/automotive/capital goods/metal. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights. Copyright © 2025 by Standard & Poor's Financial Services LLC. All rights reserved.

Of the 145 total defaulters in 2024, 130 were rated at the start of the year, and all but one of these were speculative grade. Of the publicly rated defaulters, Swedish real estate developer Samhallsbyggnadsbolaget i Norden AB (publ) was the only one with an investment-grade rating one year prior to its default. (Weak liquidity and significant short-term maturities weighed on the company.) It defaulted twice in 2024--once in March and once in July--and it was rated 'CCC' with a negative outlook as of Dec. 31, 2024.

In addition to the 130 defaulters that were rated at the start of 2024, there were 15 defaulters that weren't rated at that time. They include seven issuers that defaulted in 2024; two issuers that S&P Global Ratings initially rated after Jan. 1, 2024; and six that had been previously rated but were not rated at the start of 2024.

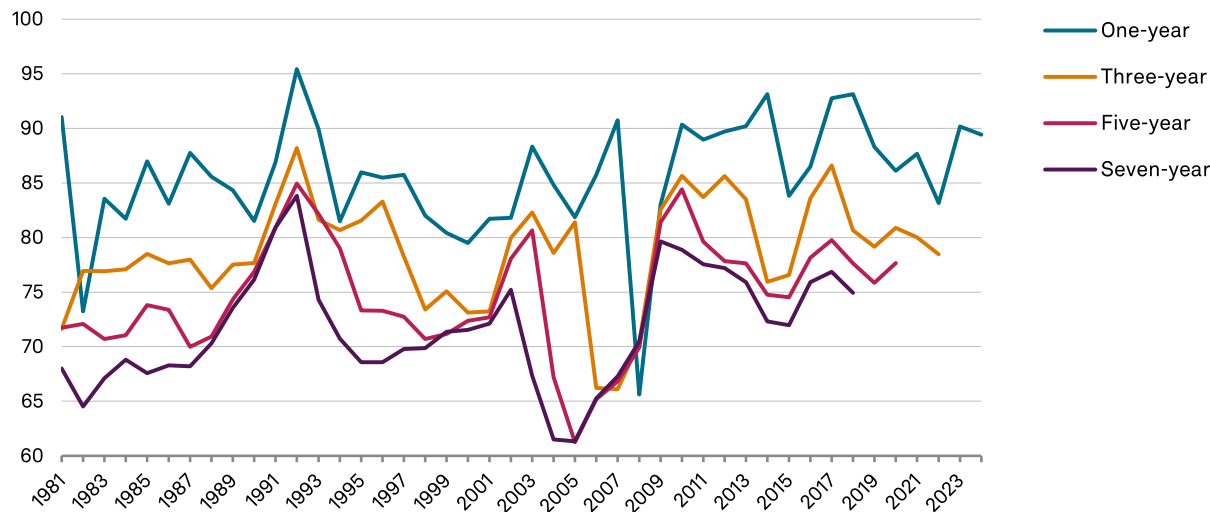
Ratings provide our view of the rank-ordering of an entity's default risk, and one measure of how our ratings perform as a rank ordering is the Gini ratio. The Gini ratio is a measure of the

rank-ordering power of ratings over a given time horizon. It shows the ratio of actual rank-ordering performance to theoretically perfect rank ordering.

With such a large share of the defaults in 2024 being concentrated in the 'CCC'/'C' category, the one-year Gini ratio remained high for the year at 89.4%--down 0.8 percentage points from 2023 and above the one-year weighted average Gini ratio of 82.9% (see chart 3 and table 2).

Chart 3

Gini coefficients by pool year across multiple time horizons



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Table 2

Global average Gini coefficients by broad sector, 1981-2024

	--Time horizon--			
	One-year	Three-year	Five-year	Seven-year
Global				
Weighted average	82.86	75.11	71.72	69.22
Average	85.65	78.73	74.66	71.68
Standard deviations	(5.33)	(4.94)	(5.19)	(5.16)
Financial				
Weighted average	80.37	70.41	63.89	59.74
Average	83.63	76.97	70.20	65.00
Standard deviations	(19.61)	(14.63)	(16.79)	(17.39)
Nonfinancial				
Weighted average	80.74	71.88	68.45	65.98
Average	84.48	76.55	72.45	69.51

Table 2

Global average Gini coefficients by broad sector, 1981–2024 (cont.)

	--Time horizon--			
	One-year	Three-year	Five-year	Seven-year
Standard deviations	(5.83)	(5.10)	(5.20)	(4.89)

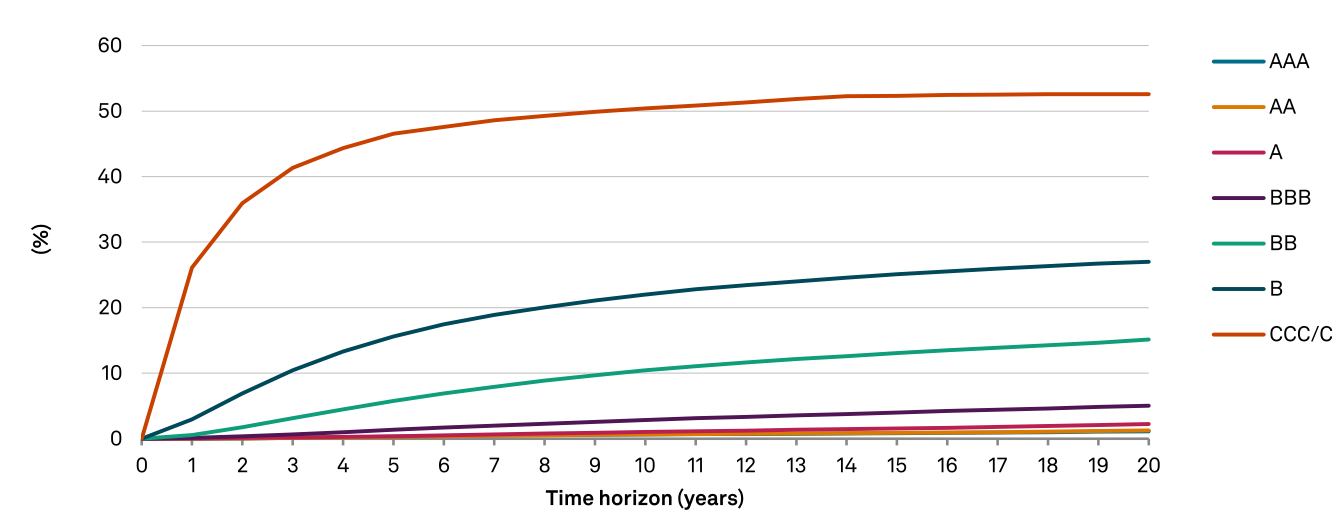
Note: Numbers in parentheses are standard deviations. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

As the Gini ratios show, corporate ratings have served as effective measures of relative credit risk over time. (For details on the Gini methodology, refer to Appendix II.)

Cumulative default rates and rating transition rates are another measure of ratings performance over time. Cumulative default rates show that lower ratings have historically corresponded to higher default rates over both short and long time horizons (see chart 4). (For more on rating transitions, see table 20 and subsequent exhibits.)

Chart 4

Global corporate average cumulative default rates by rating, 1981-2024



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Defaults in 2024 largely came from the lower rating levels. The default rate rose slightly for the 'B' category, and the 'CCC'/'C' category default rate fell in 2024 to 28.4%; it had spiked to 30.9% in 2023 (see tables 3 and 4).

Table 3

Global corporate annual default rates by rating category

	AAA	AA	A	BBB	BB	B	CCC/C
1981	0.00	0.00	0.00	0.00	0.00	2.33	0.00
1982	0.00	0.00	0.21	0.35	4.24	3.18	21.43

Table 3

Global corporate annual default rates by rating category (cont.)

	AAA	AA	A	BBB	BB	B	CCC/C
1983	0.00	0.00	0.00	0.34	1.15	4.70	6.67
1984	0.00	0.00	0.00	0.68	1.13	3.49	25.00
1985	0.00	0.00	0.00	0.00	1.48	6.53	15.38
1986	0.00	0.00	0.18	0.34	0.88	8.77	23.08
1987	0.00	0.00	0.00	0.00	0.38	3.12	12.28
1988	0.00	0.00	0.00	0.00	1.05	3.68	20.37
1989	0.00	0.00	0.18	0.61	0.72	3.41	33.33
1990	0.00	0.00	0.00	0.58	3.56	8.56	31.25
1991	0.00	0.00	0.00	0.55	1.67	13.84	33.87
1992	0.00	0.00	0.00	0.00	0.00	6.99	30.19
1993	0.00	0.00	0.00	0.00	0.70	2.62	13.33
1994	0.00	0.00	0.14	0.00	0.28	3.07	16.67
1995	0.00	0.00	0.00	0.17	1.00	4.57	28.00
1996	0.00	0.00	0.00	0.00	0.45	2.90	8.00
1997	0.00	0.00	0.00	0.25	0.19	3.50	12.00
1998	0.00	0.00	0.00	0.41	0.98	4.65	42.86
1999	0.00	0.17	0.18	0.19	0.95	7.45	33.82
2000	0.00	0.00	0.26	0.36	1.15	7.67	35.96
2001	0.00	0.00	0.26	0.33	2.91	11.34	45.45
2002	0.00	0.00	0.00	0.99	2.83	8.11	44.19
2003	0.00	0.00	0.00	0.22	0.57	4.03	32.53
2004	0.00	0.00	0.08	0.00	0.44	1.45	15.83
2005	0.00	0.00	0.00	0.07	0.31	1.74	9.02
2006	0.00	0.00	0.00	0.00	0.30	0.81	13.33
2007	0.00	0.00	0.00	0.00	0.20	0.25	15.24
2008	0.00	0.38	0.38	0.49	0.82	4.09	27.27
2009	0.00	0.00	0.22	0.55	0.76	10.87	49.46
2010	0.00	0.00	0.00	0.00	0.59	0.86	22.83
2011	0.00	0.00	0.00	0.07	0.00	1.68	16.54
2012	0.00	0.00	0.00	0.00	0.30	1.57	27.52
2013	0.00	0.00	0.00	0.00	0.10	1.52	24.67
2014	0.00	0.00	0.00	0.00	0.00	0.78	17.42
2015	0.00	0.00	0.00	0.00	0.16	2.41	26.51
2016	0.00	0.00	0.00	0.06	0.47	3.74	33.00
2017	0.00	0.00	0.00	0.00	0.08	1.00	26.56
2018	0.00	0.00	0.00	0.00	0.00	0.94	27.18

Table 3

Global corporate annual default rates by rating category (cont.)

	AAA	AA	A	BBB	BB	B	CCC/C
2019	0.00	0.00	0.00	0.11	0.00	1.50	29.61
2020	0.00	0.00	0.00	0.00	0.94	3.55	47.88
2021	0.00	0.00	0.00	0.00	0.00	0.52	10.96
2022	0.00	0.00	0.00	0.00	0.32	1.10	13.84
2023	0.00	0.00	0.00	0.11	0.25	1.25	30.89
2024	0.00	0.00	0.00	0.05	0.17	1.72	28.36

Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 4

Descriptive statistics on one-year global default rates

	AAA	AA	A	BBB	BB	B	CCC/C
Minimum	0.00	0.00	0.00	0.00	0.00	0.25	0.00
Maximum	0.00	0.38	0.38	0.99	4.24	13.84	49.46
Weighted long-term average	0.00	0.02	0.05	0.14	0.56	2.93	26.12
Median	0.00	0.00	0.00	0.06	0.46	3.15	25.75
Standard deviation	0.00	0.06	0.10	0.24	0.95	3.21	11.60
2008 default rates	0.00	0.38	0.38	0.49	0.82	4.09	27.27
Latest four quarters (Q1 2024-Q4 2024)	0.00	0.00	0.00	0.05	0.17	1.72	28.36
Difference between last four quarters and weighted average	0.00	(0.02)	(0.05)	(0.08)	(0.39)	(1.21)	2.24
No. of standard deviations		(0.28)	(0.48)	(0.34)	(0.41)	(0.38)	0.19

Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Annual Global Trends: Defaults Remained Elevated, Driven By The U.S. And Europe

The number of global corporate defaults fell 5% in 2024, but it was still the fourth-largest number of global corporate defaults since 2008. The dip in 2024, however, ended the trend of rising annual default tallies since 2021.

Defaults in 2021 dipped to a seven-year low amid the pandemic and the resulting fiscal and monetary support; that year saw very low interest rates and extremely easy financing conditions for most borrowers. By 2023, benchmark interest rates were higher with central banks tightening monetary policy globally, and financing conditions were more challenging.

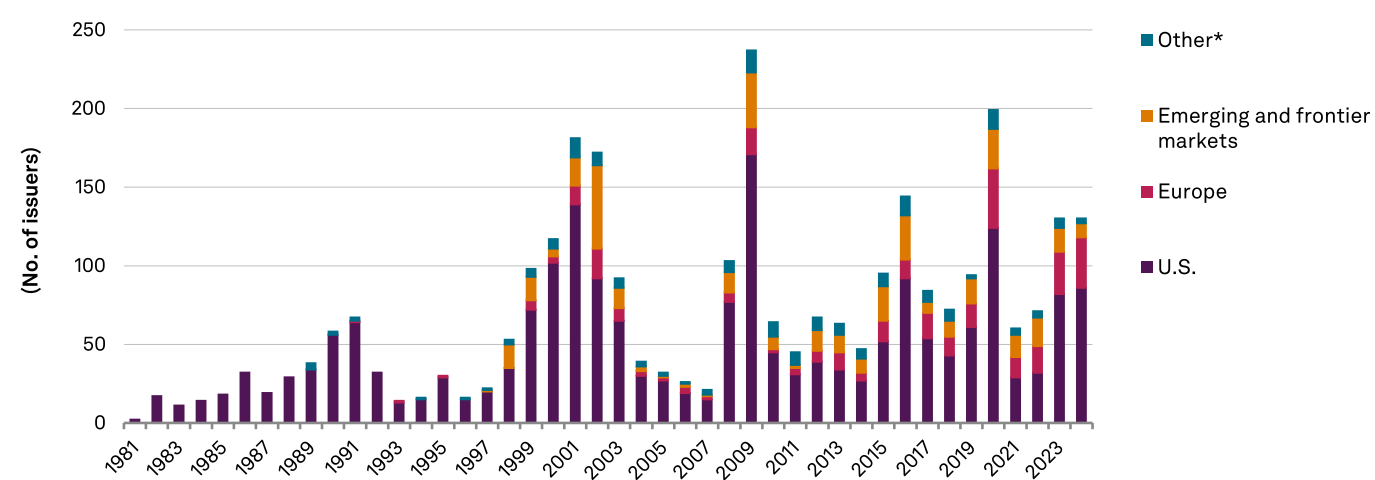
Central banks began cutting rates in 2024, leading to a resurgence in debt markets and an easing in near-term maturities--especially in 2025 speculative-grade obligations, which fell 50% globally.

However, the number of defaults remained elevated in 2024, with the number of rated defaults (that is, defaults of issuers that were rated as of Jan. 1, 2024) staying the same between 2024 and 2023 (at 130). By debt amount, defaults also remained nearly the same between 2024 (\$227.4 billion) and 2023 (\$222.4 billion) (see charts 5 and 6).

These default counts include issuers that weren't rated as of the beginning of 2024, and we count these as unrated defaults because they weren't in the static pool of rated issuers from Jan. 1, 2024.

Chart 5

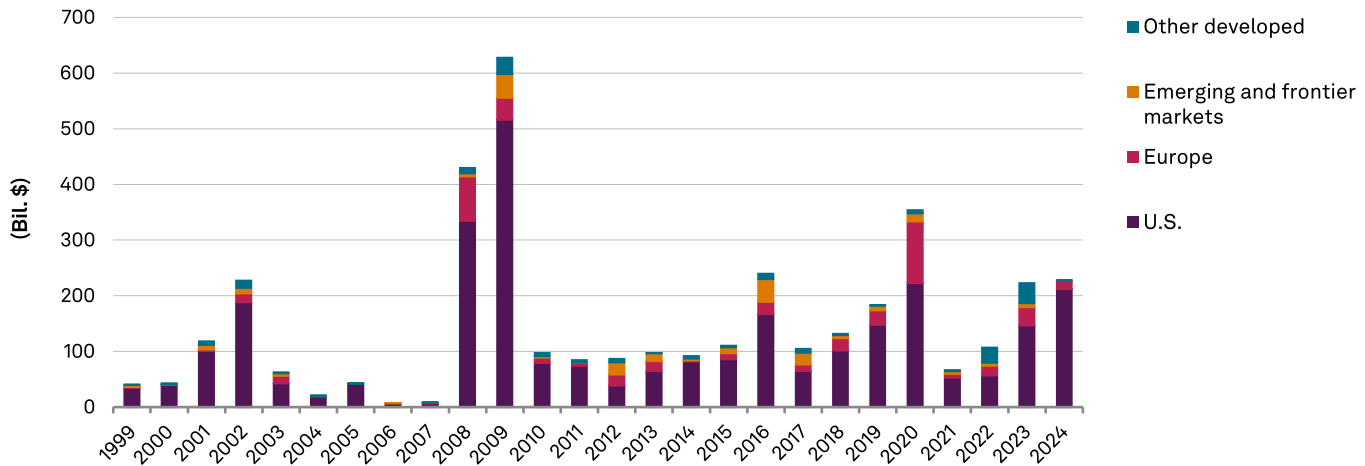
Annual corporate defaults by number of issuers



Counts exclude defaults that were not rated prior to Jan. 1 of each year. *The "Other" category includes Australia, Brunei Darussalam, Canada, Israel, Japan, Korea, New Zealand, and Singapore. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Chart 6

Annual global corporate defaulters' debt amounts outstanding



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Of the regions we track, Europe saw the largest increase in defaults in 2024. Among European issuers, the number of rated defaults rose by five (to 32), while the amount of debt affected rose to \$15.47 billion.

Meanwhile, defaults from the U.S. increased by four, while the amount of debt affected rose to \$211.7 billion from \$65.2 billion the previous year. U.S. issuers accounted for 66% of rated defaults globally (and 66% of the amount of debt affected), even though the U.S. accounts for about 42% of the global population of rated issuers.

With its highly developed capital markets, the U.S. also accounts for most of the world's speculative-grade issuers--49% of the global total. Since most defaults tend to be of speculative-grade issuers, the concentration of defaults among U.S. issuers isn't a surprise.

The speculative-grade default rate increased globally, in the U.S., and in Europe in 2024, while the default rate fell in emerging and frontier markets and in the "other developed markets" region. The speculative-grade default rate in the U.S. rose to 5.1% from 4.5% in 2023, while the default rate in Europe rose by 0.9 percentage points to 4.5%. In both the U.S. and Europe, the speculative-grade default rate in 2024 exceeded the long-term average (since 1981), mostly because of the more pronounced use of distressed exchanges in both regions.

In other developed markets and in emerging and frontier markets, the speculative-grade default rate remained below the long-term average (see table 5 and chart 21).

Table 5

Annual speculative-grade corporate default rate by region

(%)	U.S. and tax havens*	Europe\$	Emerging and frontier markets	Other†
1981	0.63	0.00	N.A.	0.00

Table 5

Annual speculative-grade corporate default rate by region (cont.)

(%)	U.S. and tax havens*	Europe§	Emerging and frontier markets	Other†
1982	4.49	0.00	N.A.	0.00
1983	3.00	0.00	N.A.	0.00
1984	3.35	0.00	0.00	0.00
1985	4.43	0.00	N.A.	0.00
1986	5.81	0.00	N.A.	0.00
1987	2.87	0.00	N.A.	0.00
1988	3.92	0.00	N.A.	0.00
1989	4.36	0.00	N.A.	37.50
1990	7.93	0.00	N.A.	28.57
1991	10.69	50.00	N.A.	25.00
1992	6.25	0.00	N.A.	0.00
1993	2.40	20.00	0.00	0.00
1994	2.21	0.00	0.00	0.00
1995	3.66	9.09	0.00	0.00
1996	1.86	0.00	0.00	2.70
1997	2.18	0.00	0.00	1.92
1998	3.26	0.00	8.90	2.41
1999	5.34	6.32	7.35	4.46
2000	7.38	2.56	2.07	5.22
2001	10.53	8.46	6.57	9.52
2002	7.24	12.59	17.26	4.35
2003	5.59	3.73	3.83	3.42
2004	2.44	1.62	0.83	1.84
2005	2.02	0.95	0.24	1.21
2006	1.37	1.81	0.43	0.69
2007	1.02	0.96	0.20	2.08
2008	4.29	2.53	2.19	4.23
2009	11.78	8.16	5.95	8.96
2010	3.46	1.02	1.55	7.32
2011	2.15	1.60	0.38	3.35
2012	2.65	2.24	2.36	3.33
2013	2.19	2.88	1.81	2.70
2014	1.61	0.97	1.30	2.11
2015	2.85	2.11	3.13	2.75
2016	5.20	1.95	3.65	4.23
2017	3.09	2.60	0.92	2.63

Table 5

Annual speculative-grade corporate default rate by region (cont.)

(%)	U.S. and tax havens*	Europe§	Emerging and frontier markets	Other†
2018	2.42	1.97	1.25	2.64
2019	3.12	2.27	1.99	0.72
2020	6.66	5.44	3.24	4.40
2021	1.54	1.84	1.87	1.54
2022	1.66	2.22	2.39	1.54
2023	4.48	3.53	2.26	2.30
2024	5.13	4.47	1.22	1.20
Average	4.10	2.99	2.94	3.30
Median	3.30	2.22	1.99	2.70
Standard deviation	2.60	2.83	3.55	2.20
Minimum	0.63	0.00	0.00	0.69
Maximum	11.78	12.59	17.26	9.52

Note: Descriptive statistics for regions other than the U.S. are calculated for 1994-2004 because of sample size considerations. *U.S., Bermuda, and Cayman Islands. §Austria, Belgium, British Virgin Islands, Bulgaria, Channel Islands, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Gibraltar, Greece, Guernsey, Hungary, Iceland, Ireland, Isle of Man, Italy, Jersey, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the U.K. †Australia, Brunei Darussalam, Canada, Israel, Japan, Korea, New Zealand, and Singapore. N.A.--Not available. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 6

Largest global rated defaulters by year

Year defaulted	Issuer	Amount (mil. \$)
1994	Confederation Life Insurance	2,415
1995	Grand Union Co./Grand Union Capital	2,163
1996	Tiphook Finance	700
1997	Flagstar Corp.	1,021
1998	Service Merchandise Co.	1,326
1999	Integrated Health Services Inc.	3,394
2000	Owens Corning	3,299
2001	Enron Corp.	10,779
2002	WorldCom Inc.	30,000
2003	Parmalat Finanziaria SpA	7,177
2004	RCN Corp.	1,800
2005	Calpine Corp.	9,559
2006	Pliant Corp.	1,644
2007	Movie Gallery Inc.	1,225
2008	Lehman Brothers Holdings Inc.	144,426
2009	Ford Motor Co.	70,989

Table 6

Largest global rated defaulters by year (cont.)

Year defaulted	Issuer	Amount (mil. \$)
2010	Energy Future Holdings Corp.	47,648
2011	Texas Competitive Electric Holdings Co. LLC	32,460
2012	BTA Bank JSC	10,184
2013	Texas Competitive Electric Holdings Co. LLC	31,628
2014	Texas Competitive Electric Holdings Co. LLC	28,651
2015	Arch Coal Inc.	6,025
2016	Petroleos de Venezuela S.A.	19,859
2017	Petroleos de Venezuela S.A.	17,617
2018	iHeartCommunications Inc.	20,176
2019	Community Health Systems Inc.	23,432
2020	Frontier Communications Corp.	22,453
2021	China Evergrande Group	11,025
2022	Bausch Health Cos. Inc.	25,365
2023	Bausch Health Cos. Inc.	26,052
2024	Lumen Technologies Inc.	38,733

Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Credit quality improved slightly in 2024

Even though the number of defaults remained high in 2024, credit quality improved for some issuers last year, driven by a fall in negative rating activity (which includes both downgrades and negative outlook revisions). The number of upgrades increased while the number of downgrades decreased, and more issuers were upgraded than downgraded.

The upgrade rate rose to 9.6% from 8.7%, and it exceeded the downgrade rate, which fell to 5.8% from 7.3% (see table 7).

Table 7

Summary of annual corporate rating changes (%)

Year	Issuers as of Jan. 1				Withdrawn ratings	Changed ratings	Unchanged ratings	Downgrade/upgrade ratio
	(no.)	Upgrades	Downgrades*	Defaults				
1981	1,349	9.86	13.27	0.15	2.08	25.35	74.65	1.35
1982	1,398	5.65	12.80	1.22	5.51	25.18	74.82	2.27
1983	1,421	7.25	11.89	0.77	5.21	25.12	74.88	1.64
1984	1,512	11.11	10.19	0.93	2.78	25.00	75.00	0.92
1985	1,603	7.74	13.91	1.12	4.05	26.82	73.18	1.80
1986	1,851	7.19	15.56	1.73	6.70	31.17	68.83	2.17

Table 7

Summary of annual corporate rating changes (%) (cont.)

(%)	Issuers as of Jan. 1 (no.)	Upgrades	Downgrades*	Defaults	Withdrawn ratings	Changed ratings	Unchanged ratings	Downgrade/upgrade ratio
1987	2,015	7.10	11.96	0.94	9.03	29.03	70.97	1.69
1988	2,103	8.94	11.75	1.38	8.04	30.10	69.90	1.31
1989	2,142	9.66	10.97	1.77	7.56	29.97	70.03	1.14
1990	2,141	6.12	15.18	2.71	6.40	30.41	69.59	2.48
1991	2,078	5.97	14.05	3.22	3.51	26.76	73.24	2.35
1992	2,154	9.52	11.47	1.49	3.85	26.32	73.68	1.20
1993	2,337	8.60	9.29	0.60	8.17	26.66	73.34	1.08
1994	2,563	7.18	9.33	0.62	4.56	21.69	78.31	1.30
1995	2,866	9.11	9.94	1.05	4.54	24.63	75.37	1.09
1996	3,127	9.63	7.80	0.51	7.04	24.98	75.02	0.81
1997	3,487	9.26	8.06	0.63	7.46	25.41	74.59	0.87
1998	4,085	7.47	11.58	1.30	7.98	28.32	71.68	1.55
1999	4,544	5.96	11.95	2.16	8.89	28.96	71.04	2.00
2000	4,716	6.85	12.62	2.46	7.00	28.92	71.08	1.84
2001	4,840	5.89	16.45	3.70	7.33	33.37	66.63	2.79
2002	4,882	5.12	18.89	3.52	7.09	34.62	65.38	3.69
2003	4,888	6.38	14.38	1.88	7.22	29.87	70.13	2.25
2004	5,045	8.96	7.59	0.77	7.18	24.50	75.50	0.85
2005	5,334	12.88	9.19	0.60	8.32	30.99	69.01	0.71
2006	5,495	12.34	8.72	0.47	8.63	30.15	69.85	0.71
2007	5,678	13.56	9.35	0.37	10.66	33.94	66.06	0.69
2008	5,752	7.91	16.05	1.79	7.55	33.29	66.71	2.03
2009	5,638	4.79	19.12	4.15	8.74	36.80	63.20	3.99
2010	5,338	11.86	8.73	1.20	6.39	28.18	71.82	0.74
2011	5,653	12.24	11.99	0.80	7.68	32.71	67.29	0.98
2012	5,836	8.31	12.20	1.13	6.85	28.50	71.50	1.47
2013	6,069	11.35	9.34	1.02	6.69	28.41	71.59	0.82
2014	6,511	9.09	8.49	0.69	7.22	25.50	74.50	0.93
2015	6,915	7.36	11.87	1.36	8.19	28.78	71.22	1.61
2016	6,912	7.86	12.11	2.08	8.32	30.37	69.63	1.54
2017	6,878	8.88	8.78	1.21	9.07	27.94	72.06	0.99
2018	6,947	9.00	8.77	1.02	8.05	26.83	73.17	0.97
2019	7,195	6.31	8.99	1.31	7.85	24.46	75.54	1.43
2020	7,161	2.74	18.45	2.76	6.87	30.82	69.18	6.74
2021	7,074	10.14	5.43	0.85	8.59	25.01	74.99	0.54

Table 7

Summary of annual corporate rating changes (%) (cont.)

(%)	Issuers as of Jan. 1 (no.)	Upgrades	Downgrades*	Defaults	Withdrawn ratings	Changed ratings	Unchanged ratings	Downgrade/upgrade ratio
2022	7,207	8.24	6.11	0.99	8.53	23.87	76.13	0.74
2023	6,986	8.96	7.33	1.86	5.98	24.13	75.87	0.82
2024	6,815	9.63	5.84	1.91	5.99	23.36	76.64	0.61
Weighted average		8.49	10.94	1.50	7.40	28.34	71.66	1.58
Average		8.41	11.31	1.46	6.94	28.12	71.88	1.58
Median		8.46	11.52	1.20	7.22	28.25	71.75	1.31
Standard deviation		2.29	3.39	0.93	1.81	3.39	3.39	1.11
Minimum		2.74	5.43	0.15	2.08	21.69	63.20	0.54
Maximum		13.56	19.12	4.15	10.66	36.80	78.31	6.74

This table compares the net change in ratings from the first to the last day of each year. All intermediate ratings are disregarded. *Excludes downgrades to 'D', which are shown separately in the "Defaults" column. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

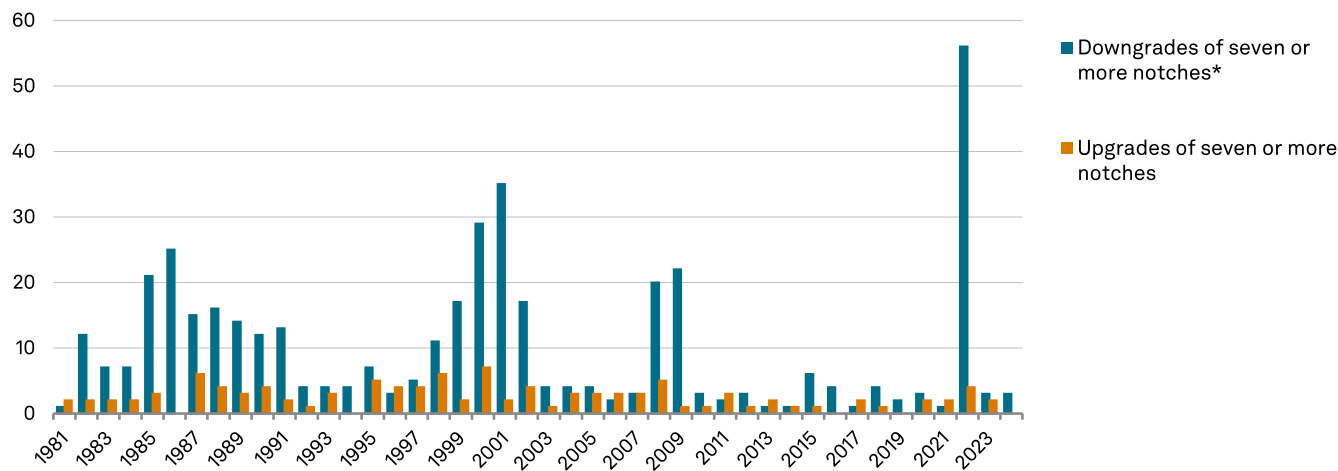
Multinotch downgrades outpaced multinotch upgrades

We define a large multinotch downgrade as a downward transition of a rating by seven or more notches in a year. There were three such downgrades in 2024, the same as in 2023. Meanwhile, there were no large multinotch upgrades last year, down from two in 2023.

Our count of large downgrades includes moves to 'D' (default). This is different from other parts of this report where we normally exclude defaults from the calculation of downgrade rates. In 2024, Avon Products Inc. defaulted from 'BB-'.

Chart 7

Count of global corporate issuers with "big" rating moves



For this chart, a "big" rating move is defined as a rating upgrade or downgrade of seven or more notches. *Downgrades include moves to default. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

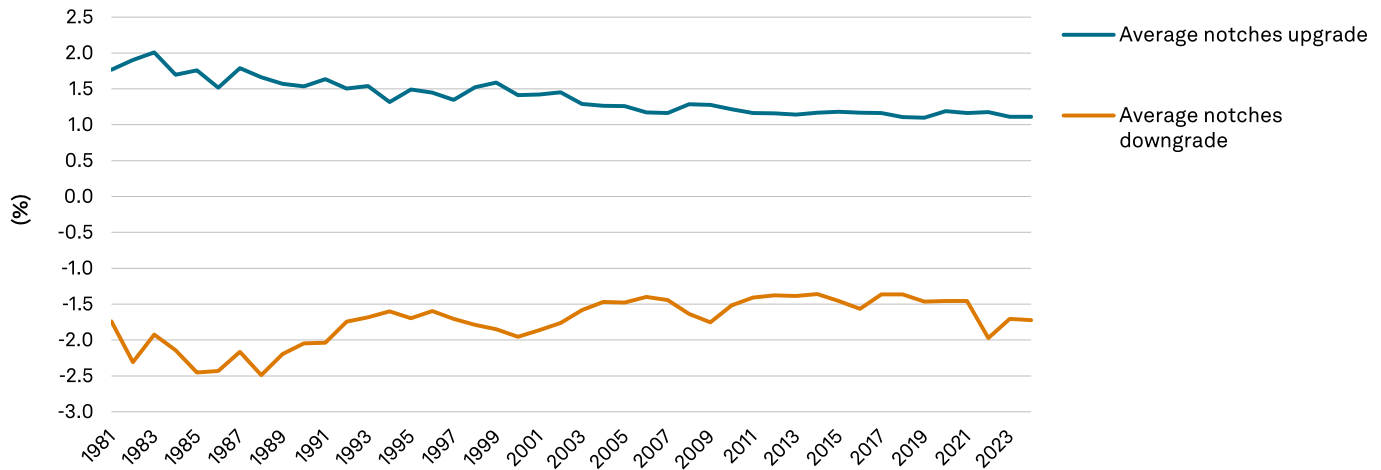
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Large multinotch downgrades such as that of Avon Products are outliers, especially in years of high credit stability. Since 1981, the annual average for the number of notches per downgrade has been 1.7 notches. In 2024, the number of notches for a downgrade averaged 1.7, the same as in 2023.

The average number of notches for an upgrade (1.1) also remained the same between 2024 and 2023 (see chart 8).

Chart 8

Average notch movements among global rating actions



Long-term average based on data for 1981-2024. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

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Lower initial ratings correspond with a shorter time to default

Historically, among the issuers that default, the median time to default is four years after the initial rating. And the average time from initial rating to default tends to be shorter for issuers initially rated at lower rating levels (see chart 9).

Among the issuers with an initial rating in the 'CCC'/'C' rating category, the majority of the defaults occur within the first 15 months after the initial rating. For those with an initial rating in the 'B' category, the majority of defaults occur within the first four years after the initial rating. For 'BB' issuers, the majority of defaults take place within six years.

An issuer's credit quality tends to deteriorate in the run-up to an eventual default, and most ratings will transition lower during the path to default. With this deterioration, an issuer is most often rated 'CCC+' or lower immediately prior to a default.

The high default rate in the 'CCC'/'C' category aligns with S&P Global Ratings' criteria for assigning such ratings (see "Criteria For Assigning 'CCC+', 'CCC', 'CCC-', And 'CC' Ratings," published Oct. 1, 2012), as S&P Global Ratings defines a 'CCC' issue as "currently vulnerable to nonpayment, and is dependent upon favorable business, financial, and economic conditions for the obligor to meet its financial commitment on the obligation. In the event of adverse business, financial, or economic conditions, the obligor is not likely to have the capacity to meet its financial commitment on the obligation."

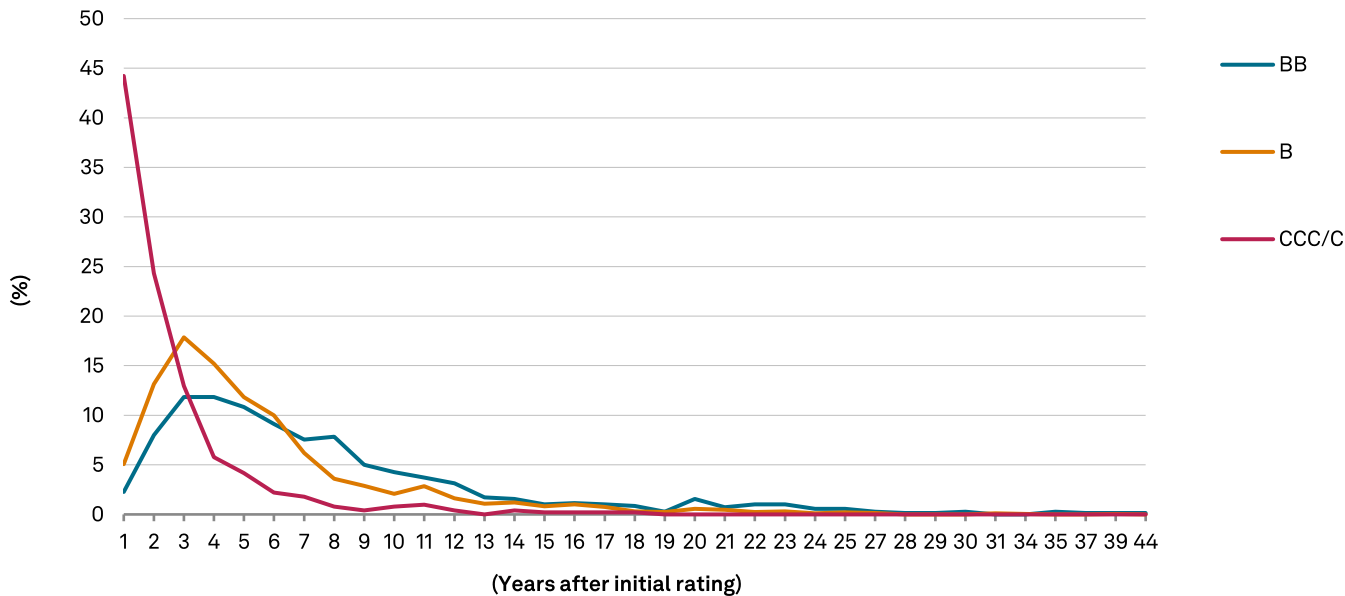
Many of the issuers to which we assign an initial rating of 'CCC+' or lower are those that have previously defaulted, including through a distressed exchange. For the purposes of this study, we treat a rating after a default as a new initial rating for the issuer.

While the 'CCC'/'C' category has the highest default rate among initial rating categories just

around 5% of initial ratings are in the 'CCC'/'C' category. Most new ratings are in the 'B' (39%) and 'BB' (18%) rating categories.

Chart 9

Tracking global corporate default rates from the initial rating category



Data based on universe of defaulters in the 1981-2024 period. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Median ratings and the path to default

Defaults of investment-grade issuers (where an issuer was investment grade at the start of the year it defaulted) are becoming more infrequent. There was one investment-grade default in 2024, and the investment-grade defaults that occurred in 2023 were the first ones in four years. In addition, there have been only seven investment-grade defaults since 2010--an average of 0.5 per year.

In the 1981-2010 period, investment-grade defaults were more frequent, averaging 2.9 per year. But they still accounted for a very small portion of defaults.

In the 1981-2024 period, the path for most defaulters toward a default has tended to be a gradual deterioration that accelerated as default neared (see chart 10). The median rating for an issuer seven years before default was 'B+', gradually falling to 'B-' nine months before default and then to 'CCC' about a month before default.

For issuers that defaulted more recently (within the last three years), the path to default has been less steep. Of these more recent defaulters, 95.8% were initially rated speculative grade, and the median rating seven years before default ('B+') was the same as it was for the 1981-2024 period. The median rating for the more recent defaulters deteriorated to 'B' roughly six years before

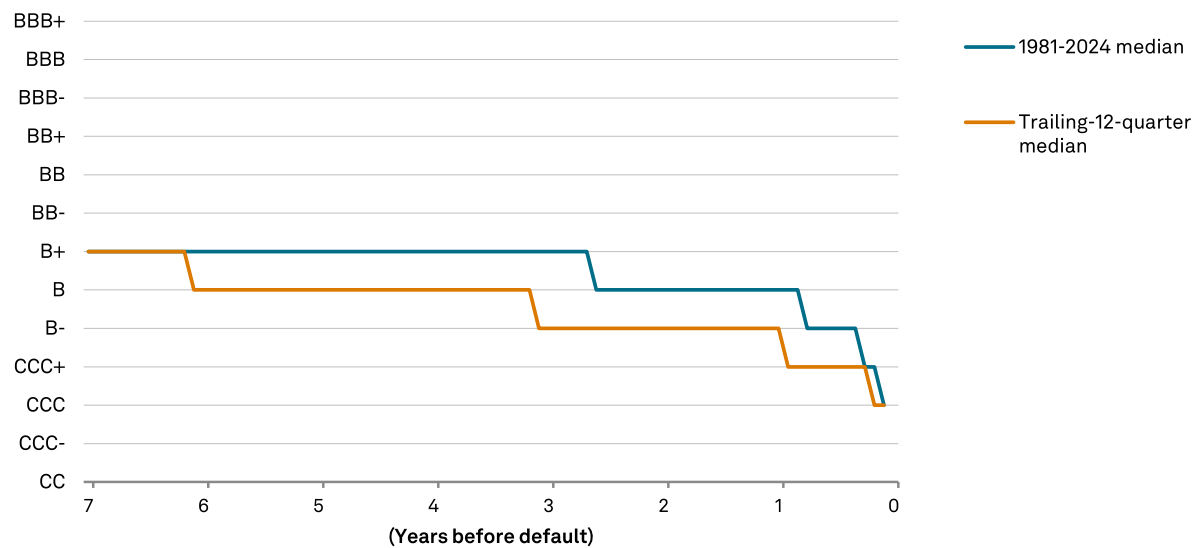
default, before falling to 'CCC+' about a year before default and to 'CCC' two months before default.

The typical path to default diverges for financial services and nonfinancial corporate issuers. For the 1981–2024 period, the median rating for all financial services defaulters seven years before default ('BBB-') was higher than for nonfinancial corporates ('B+') (see charts 11 and 12).

For nonfinancial issuers, defaults are much more common than they are among financial services issuers, and this results in a larger pool of defaulters. In the 44 years covered in this study, 3,217 nonfinancial issuers defaulted, compared with just 339 financial services issuers. Outliers have a greater effect on the default statistics for financial services issuers because of the smaller pool of defaults.

Chart 10

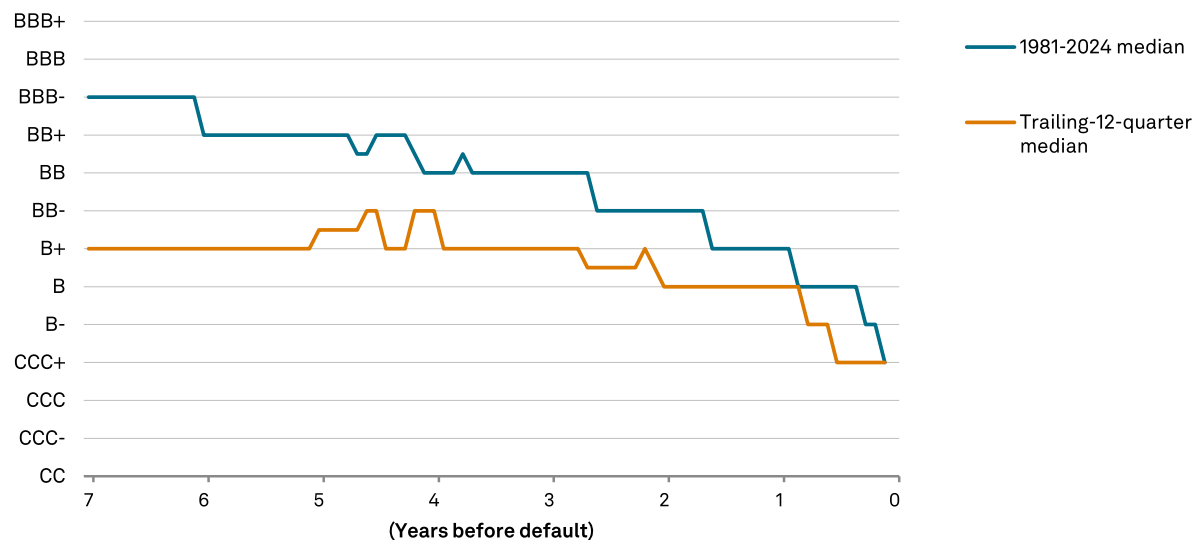
Median rating path of corporate defaulters



Data through Dec. 31, 2024. Does not include rating changes to not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Chart 11

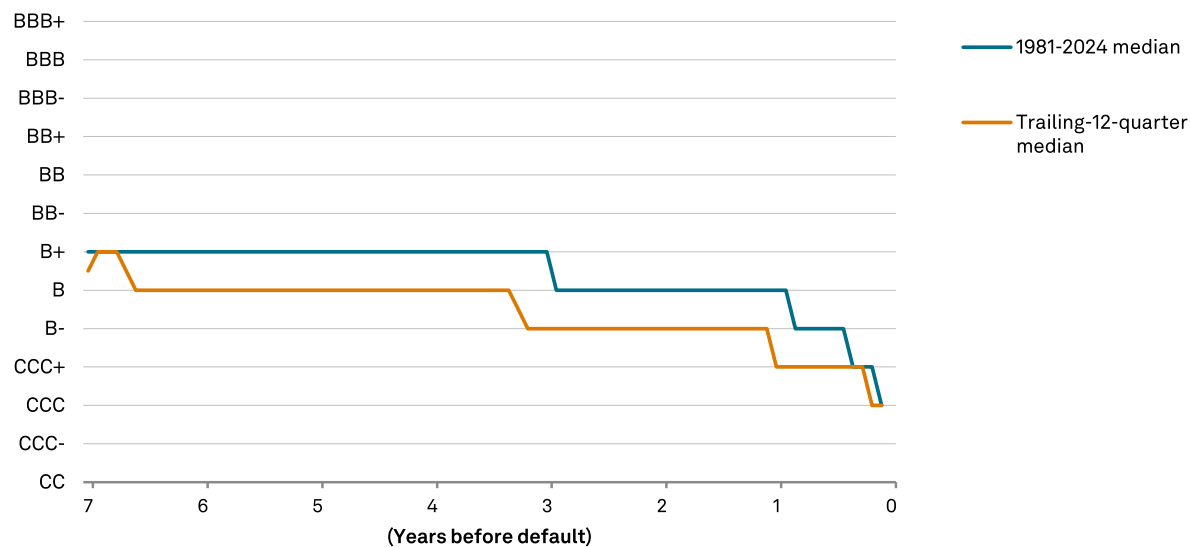
Median rating path of financial defaulters



Data through Dec. 31, 2024. Does not include rating changes to not rated. Financial sector includes insurance companies and financial institutions. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Chart 12

Median rating path of nonfinancial defaulters



Data through Dec. 31, 2023. Does not include rating changes to not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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In our annual default rate calculations, we only include defaulters that were rated as of Jan. 1 in the year of default. If S&P Global Ratings withdrew its rating on an issuer before Jan. 1 of the year it defaults, it isn't included in the annual default rate calculation for that year.

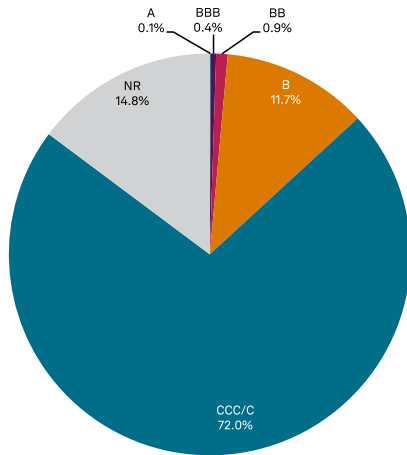
Issuers sometimes default after S&P Global Ratings withdraws its rating--we make our best effort to capture these defaults in our database. Historically, 14.8% of defaults are of entities that were no longer rated at the time of default.

Although defaulters that are not rated as of Jan. 1 of a given year are excluded from the one-year annual default rate calculations for that year, they are observed for all years where they had an active rating on Jan. 1. When an issuer emerges from default (including following distressed exchanges), we consider it a separate entity, with a new initial rating after the default event.

Of all of the defaults in our database, 72.0% were rated below 'CCC+' when they defaulted (see chart 13). Very infrequently, an investment-grade rating will default--this accounts for just over 0.5% of all defaults. Of the defaults in 2024, 91.7% were rated 'CCC+' or below when they defaulted. Just two defaults were rated investment grade one year before their default.

Chart 13a

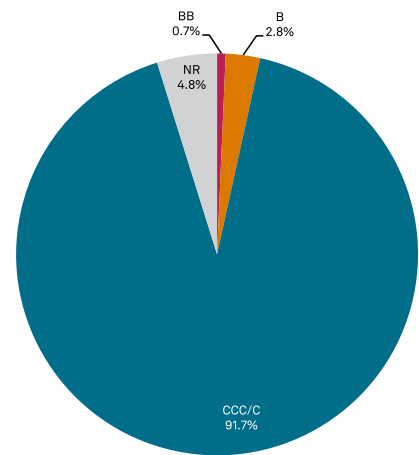
Default distribution by rating prior to 'D', 1981-2024



NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Chart 13b

Default distribution by rating prior to 'D', 2024



NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Default observations for 2024

- Of the 145 corporate defaults in 2024, the majority (97) were of companies in the U.S. and associated tax havens (Bermuda and Cayman Islands). Europe followed with 33 defaults, emerging and frontier markets had 12, and other developed markets had three.
- Distressed exchanges (which are typically selective defaults) accounted for 59.3% of all defaults, much higher than the share attributed to missed interest or principal payments (18.6%). In a distressed exchange, we view an exchange of one or more of the issuer's financial obligations as tantamount to default.
- Various types of bankruptcy filings accounted for 22.1% of all defaults (see table 8 for a list of all of the publicly rated defaulters in 2024, including the reasons for default).
- The largest default in 2024 was that of Lumen Technologies Inc., which accounted for \$38.7 billion of the debt affected by defaults during the year.
- Six of the defaulters in 2024 were initially rated investment grade, and five of those six were initially rated in the 'BBB' rating category. (The sixth was initially rated 'A'.)
- Among those six defaulters that were initially rated investment grade, the average time to default--the time between the first rating and the date of default--was 17.4 years, with an associated standard deviation of 14.3 years.
- In contrast, the average time to default for entities that were initially rated speculative grade was 5.4 years, with an associated standard deviation of 6.1 years.
- The issuer with the longest time to default in 2024 was Lumen Technologies. The initial issuer credit rating was 'BB-' on Dec. 31, 1980, more than 43 years before the rating was lowered to 'SD' in March 2024.
- The issuer with the shortest time to default (35 days) was Range Parent Inc., a U.S. issuer from the aerospace/automotive/capital goods/metal sector.

Table 8

2024 global publicly rated corporate defaults

Company name	Reason for default	Country	Industry	Debt amount outstanding (mil. \$)	Default date	Rating one year before default	Rating three years before default	First rating	Date of first rating
Resolute Investment Managers Inc.	Distressed Exchange	U.S.	Financial institutions	991.0	01/02/24	B	B+	B+	06/12/15
Toro Private Holdings I Ltd.	Distressed Exchange	U.K.	Transportation	0.0	01/04/24	-	-	CCC+	04/19/23
AMT TopCo LLC	Missed Interest	U.S.	Health care/chemicals	320.0	01/05/24	B-	-	B-	03/08/21
Ignition Topco B.V.	Missed Interest	Netherlands	Health care/chemicals	342.2	01/10/24	B-	B-	B	08/20/18
Amphora Intermediate II Ltd.	Missed Interest	U.K.	Consumer/service sector	0.0	01/11/24	CCC+	B-	B	07/16/18
Covis Finco S.a.r.l.	Distressed Exchange	Switzerland	Health care/chemicals	0.0	01/16/24	-	-	B-	06/01/23
TMK Hawk Parent Corp.	Distressed Exchange	U.S.	Consumer/service sector	936.1	01/17/24	CCC	CCC	CCC	10/13/20
KNS Holdco LLC	Distressed Exchange	U.S.	Consumer/service sector	662.0	01/18/24	B	-	B	03/30/21
System1 Inc.	Distressed Exchange	U.S.	Leisure time/media	400.0	01/19/24	B	-	B	02/07/22
New Trojan Parent Inc.	Chapter 11	U.S.	Consumer/service sector	815.0	01/24/24	B-	B	B	01/11/21
Gol Linhas Aereas Inteligentes S.A.	Chapter 11	Brazil	Transportation	0.0	01/26/24	-	-	CCC+	03/15/23
AMC Entertainment Holdings Inc.	Distressed Exchange	U.S.	Leisure time/media	6,230.0	01/31/24	-	-	CCC+	02/22/23
Enjoy S.A.	Foreign Bankruptcy	Chile	Leisure time/media	0.0	01/31/24	CCC+	-	CCC+	05/03/21
Cano Health Inc.	Chapter 11	U.S.	Health care/chemicals	1,564.0	02/05/24	B-	-	B	06/18/21
Astro Intermediate Holding II Corp.	Missed Principal/Interest	U.S.	Consumer/service sector	450.0	02/06/24	B-	-	B-	09/28/21
Pluto Acquisition I Inc.	Distressed Exchange	U.S.	Health care/chemicals	913.4	02/08/24	B-	B-	B-	05/31/19
CLISA-Compania Latinoamericana de Infraestructura & Servicios S.A.	Distressed Exchange	Argentina	Aerospace/automotive/capital goods/metal	0.0	02/14/24	CCC	-	CCC	08/18/21
GoTo Group Inc.	Distressed Exchange	U.S.	High tech/computers/office equipment	3,250.0	02/14/24	B	B-	B-	08/03/20
AFE S.A.	Distressed Exchange	U.K.	Financial institutions	0.0	02/15/24	B	B	BB-	09/14/17
Enviva Inc.	Missed Interest	U.S.	Energy and natural resources	750.0	02/16/24	BB-	BB-	B+	10/17/16
Range Parent Inc.	Chapter 11	U.S.	Aerospace/automotive/capital goods/metal	727.0	02/16/24	-	-	CCC-	01/12/24
Vue Entertainment International Ltd.	Distressed Exchange	U.K.	Leisure time/media	0.0	02/20/24	CCC+	-	CCC+	01/26/23

Table 8

2024 global publicly rated corporate defaults (cont.)

Company name	Reason for default	Country	Industry	Debt amount outstanding (mil. \$)	Default date	Rating one year before default	Rating three years before default	First rating	Date of first rating
Hornblower HoldCo LLC	Chapter 11	U.S.	Leisure time/media	715.0	02/21/24	CCC	CCC	B	03/09/18
Tribe Buyer LLC	Missed Principal	U.S.	Leisure time/media	400.0	02/21/24	CCC+	CCC+	B	01/25/17
Avison Young (Canada) Inc.	Missed Principal/Interest	Canada	Financial institutions	0.0	02/23/24	B-	B-	B+	12/05/16
Apex Tool Group LLC	Distressed Exchange	U.S.	Forest and building products/homebuilders	1,376.6	02/26/24	B-	CCC+	B	03/22/13
Radiology Partners Holdings LLC	Distressed Exchange	U.S.	Health care/chemicals	3,885.0	02/26/24	B-	B-	B	06/12/18
Curo Group Holdings Corp.	Missed Interest	U.S.	Financial institutions	1,000.0	03/05/24	-	-	CCC+	05/23/23
Hurtigruten Group AS	Distressed Exchange	Norway	Leisure time/media	0.0	03/18/24	CCC+	CCC+	B	04/14/15
Joann Inc.	Chapter 11	U.S.	Consumer/service sector	675.0	03/19/24	CCC+	B-	B	10/09/12
Lumen Technologies Inc.	Distressed Exchange	U.S.	Telecommunications	29,772.2	03/22/24	B	BB	BB-	12/31/80
Samhallsbyggnadsbolaget i Norden AB (publ)	Distressed Exchange	Sweden	Real estate	0.0	03/27/24	BBB-	BBB-	BB	01/15/18
Atlas Midco Inc.	Distressed Exchange	U.S.	High tech/computers/office equipment	935.0	03/29/24	B-	-	B-	04/19/21
Aventiv Technologies LLC	Distressed Exchange	U.S.	Telecommunications	1,889.5	03/29/24	CCC+	B-	B-	01/17/20
La Financiere Atalian SAS	Distressed Exchange	France	Consumer/service sector	903.5	03/29/24	B-	B	B+	01/08/13
Wom S.A.	Chapter 11	Chile	Telecommunications	0.0	04/01/24	B+	B+	B+	12/04/19
Rackspace Technology Global Inc.	Distressed Exchange	U.S.	High tech/computers/office equipment	3,300.0	04/03/24	-	-	CCC+	08/18/23
Never Slip Topco Inc.	Chapter 11	U.S.	Consumer/service sector	283.0	04/04/24	CCC+	CCC+	CCC+	08/05/20
Arvos LuxCo S.a.r.l.	Distressed Exchange	Luxembourg	Aerospace/automotive/capital goods/metal	0.0	04/05/24	CCC	CCC	B	12/15/14
Baffinland Iron Mines Corp.	Distressed Exchange	Canada	Aerospace/automotive/capital goods/metal	0.0	04/05/24	B-	B-	B-	12/09/16
Casa Systems Inc.	Chapter 11	U.S.	High tech/computers/office equipment	218.8	04/05/24	CCC	B-	BB-	11/30/16
ConvergeOne Holdings Inc.	Chapter 11	U.S.	Consumer/service sector	1,385.0	04/05/24	B-	B-	B	05/29/14
Loparex Midco B.V.	Distressed Exchange	Netherlands	Forest and building products/homebuilders	171.4	04/08/24	B-	B-	B	07/10/19
99 cents only stores LLC	Chapter 11	U.S.	Consumer/service sector	350.0	04/10/24	CCC	-	CCC	04/04/23
Express Inc.	Chapter 11	U.S.	Consumer/service sector	0.0	04/22/24	NR	NR	B	06/19/07
City Brewing Co. LLC	Distressed Exchange	U.S.	Consumer/service sector	850.0	04/23/24	CCC	B+	B+	03/23/21

Table 8

2024 global publicly rated corporate defaults (cont.)

Company name	Reason for default	Country	Industry	Debt amount outstanding (mil. \$)	Default date	Rating one year before default	Rating three years before default	First rating	Date of first rating
EyeCare Partners LLC	Distressed Exchange	U.S.	Health care/chemicals	2,400.0	04/24/24	B-	B	B	01/22/20
Digital Media Solutions Inc.	Distressed Exchange	U.S.	Leisure time/media	275.0	04/29/24	-	-	CCC	08/30/23
Keter Group B.V.	Distressed Exchange	Netherlands	Consumer/service sector	1,124.4	04/29/24	CCC	B-	B	09/13/16
Xplore Inc.	Missed Interest	Canada	Telecommunications	217.4	04/29/24	B-	B-	B-	08/12/16
Cumulus Media Inc.	Distressed Exchange	U.S.	Leisure time/media	1,025.0	05/06/24	B-	B-	B-	05/30/18
Steward Health Care System LLC	Chapter 11	U.S.	Health care/chemicals	0.0	05/06/24	NR	NR	B	03/28/13
Farfetch Ltd.	Missed Interest	U.K.	Consumer/service sector	0.0	05/10/24	B-	-	B-	12/21/22
Credivalores - Crediservicios SAS	Chapter 7	Colombia	Financial institutions	0.0	05/16/24	CCC+	B	B+	11/14/14
Petrofac Ltd.	Missed Interest	Jersey	Energy and natural resources	0.0	05/17/24	BB-	NR	BBB+	05/17/13
Global Medical Response Inc.	Distressed Exchange	U.S.	Health care/chemicals	4,474.1	05/20/24	CCC+	B	B	10/06/10
Compact Bidco B.V.	Missed Interest	Netherlands	Forest and building products/homebuilders	276.4	05/21/24	B-	-	B-	09/21/21
Zachry Holdings Inc.	Chapter 11	U.S.	Aerospace/automotive/capital goods/metal	0.0	05/21/24	NR	NR	BB-	03/12/13
New Insight Holdings Inc.	Chapter 11	U.S.	Leisure time/media	0.0	05/22/24	CCC+	B-	B	11/02/17
Astra Acquisition Corp.	Distressed Exchange	U.S.	High tech/computers/office equipment	1,440.0	05/23/24	B-	B-	B-	02/07/20
Maverick Gaming LLC	Distressed Exchange	U.S.	Leisure time/media	350.0	05/28/24	-	-	CCC	08/31/23
Safari Beteiligungs GmbH	Distressed Exchange	Germany	Leisure time/media	237.4	05/28/24	NR	-	CCC+	05/24/22
AMC Entertainment Holdings Inc.	Distressed Exchange	U.S.	Leisure time/media	6,005.0	05/30/24	-	-	CCC+	02/08/24
Sound Inpatient Physicians Inc.	Distressed Exchange	U.S.	Health care/chemicals	1,050.0	06/03/24	B-	B	B	05/05/21
Valcour Packaging LLC	Distressed Exchange	U.S.	Aerospace/automotive/capital goods/metal	580.0	06/11/24	CCC+	-	B-	09/20/21
Vyaire Medical Inc.	Chapter 11	U.S.	Health care/chemicals	360.0	06/12/24	CCC	CCC+	B-	03/19/18
Premier Dental Services Inc.	Distressed Exchange	U.S.	Health care/chemicals	600.0	06/18/24	B-	B-	B	10/18/12
OQ Chemicals International Holding GmbH	Missed Interest	Germany	Health care/chemicals	441.9	06/19/24	-	-	B+	08/04/23

Table 8

2024 global publicly rated corporate defaults (cont.)

Company name	Reason for default	Country	Industry	Debt amount outstanding (mil. \$)	Default date	Rating one year before default	Rating three years before default	First rating	Date of first rating
Office Properties Income Trust	Distressed Exchange	U.S.	Real estate	2,150.0	06/21/24	BB	BBB-	BBB-	09/21/10
Adler Group S.A.	Distressed Exchange	Luxembourg	Real estate	3,160.5	06/24/24	CCC+	-	CCC+	04/27/23
Pro.Gest SpA	Missed Interest	Italy	Forest and building products/homebuilders	233.6	06/25/24	CCC+	CCC+	BB-	02/02/18
Samhallsbyggnadsbolaget i Norden AB (publ)	Distressed Exchange	Sweden	Real estate	0.0	07/03/24	-	-	CCC	03/28/24
DTEK Renewables B.V.	Distressed Exchange	Netherlands	Utilities	297.8	07/18/24	CCC-	B-	B-	11/08/19
Rodan & Fields LLC	Missed Principal/Interest	U.S.	Consumer/service sector	549.6	07/18/24	CCC	-	CCC	05/16/23
Hunkemoller International B.V.	Distressed Exchange	Netherlands	Consumer/service sector	250.5	07/22/24	-	-	CCC+	11/23/23
AMC Entertainment Holdings Inc.	Distressed Exchange	U.S.	Leisure time/media	6,005.0	07/23/24	-	-	CCC+	06/05/24
Conn's Inc.	Chapter 11	U.S.	Consumer/service sector	0.0	07/23/24	NR	B	B	06/23/14
Stitch Acquisition Corp.	Distressed Exchange	U.S.	Consumer/service sector	370.0	07/24/24	CCC	B	B	07/07/21
Atos SE	Missed Interest	France	High tech/computers/office equipment	1,749.9	07/26/24	BB	BBB+	BBB+	10/22/18
Quincy Health LLC	Distressed Exchange	U.S.	Health care/chemicals	732.0	07/29/24	-	-	CCC-	12/14/23
Grupo Idesa S.A. de C.V.	Distressed Exchange	Mexico	Health care/chemicals	0.0	08/06/24	B-	-	B-	05/22/23
Community Health Systems Inc.	Distressed Exchange	U.S.	Health care/chemicals	12,145.4	08/07/24	-	-	CCC+	12/18/23
Del Monte Foods Inc.	Distressed Exchange	U.S.	Consumer/service sector	725.0	08/08/24	B	B-	CCC+	07/02/18
HDT Holdco Inc.	Distressed Exchange	U.S.	Aerospace/automotive/capital goods/metal	320.0	08/12/24	CCC	B	B	06/10/21
Avon Products Inc.	Chapter 11	U.S.	Consumer/service sector	250.0	08/13/24	BB-	BB-	A-	11/01/82
Connect Holding II LLC	Distressed Exchange	U.S.	Telecommunications	3,600.0	08/15/24	B-	-	B-	09/19/22
Pfleiderer Group B.V. & Co. KG	Distressed Exchange	Germany	Forest and building products/homebuilders	2,167.7	08/15/24	B	B	B+	01/20/17
SIRVA Inc.	Distressed Exchange	U.S.	Consumer/service sector	610.0	08/22/24	B-	CCC+	B	10/26/16
Magenta Buyer LLC	Distressed Exchange	U.S.	High tech/computers/office equipment	4,465.0	08/26/24	B-	B	B	04/16/21

Table 8

2024 global publicly rated corporate defaults (cont.)

Company name	Reason for default	Country	Industry	Debt amount outstanding (mil. \$)	Default date	Rating one year before default	Rating three years before default	First rating	Date of first rating
CLISA-Compania Latinoamericana de Infraestructura & Servicios S.A.	Missed Interest	Argentina	Aerospace/automotive/capital goods/metal	0.0	08/27/24	-	-	CCC-	02/16/24
PECF USS Intermediate Holding III Corp.	Distressed Exchange	U.S.	Forest and building products/homebuilders	2,650.0	08/28/24	CCC+	-	B-	10/26/21
Big Lots Inc.	Chapter 11	U.S.	Consumer/service sector	0.0	09/09/24	NR	NR	BBB	10/01/97
American Rock Salt Co. LLC	Missed Interest	U.S.	Energy and natural resources	600.0	09/10/24	B-	B	B	02/24/04
Wheel Pros Inc.	Chapter 11	U.S.	Aerospace/automotive/capital goods/metal	3,061.6	09/10/24	-	-	CCC+	09/27/23
Operadora de Servicios Mega, S.A. de C.V. SOFOM, E.R.	Missed Interest	Mexico	Financial institutions	0.0	09/11/24	B	BB-	BB	01/29/20
Digital Media Solutions Inc.	Chapter 11	U.S.	Leisure time/media	363.0	09/12/24	-	-	CCC	05/02/24
Poseidon Investment Intermediate L.P.	Distressed Exchange	U.S.	Aerospace/automotive/capital goods/metal	3,209.0	09/16/24	-	-	CCC+	10/23/23
TalkTalk Telecom Group Ltd.	Distressed Exchange	U.K.	Telecommunications	515.9	09/19/24	B-	B+	BB-	01/10/17
Carestream Dental Technology Parent Ltd.	Distressed Exchange	U.K.	Health care/chemicals	0.0	09/20/24	CCC	B	B	07/24/17
SK Mohawk Holdings S.a.r.l.	Distressed Exchange	Germany	Health care/chemicals	2,047.5	09/20/24	CCC	B-	B-	04/28/21
Tosca Services LLC	Distressed Exchange	U.S.	Aerospace/automotive/capital goods/metal	626.5	09/24/24	CCC+	B	B	02/20/20
Vertex Energy Inc.	Chapter 11	U.S.	Energy and natural resources	0.0	09/26/24	B	-	B	07/05/22
ASP Unifrax Holdings Inc.	Distressed Exchange	U.S.	Aerospace/automotive/capital goods/metal	2,550.0	10/02/24	CCC+	B-	B-	10/16/18
Lumen Technologies Inc.	Distressed Exchange	U.S.	Telecommunications	38,733.2	10/02/24	-	-	CCC+	04/04/24
New Constellis Borrower LLC	Distressed Exchange	U.S.	Aerospace/automotive/capital goods/metal	260.0	10/02/24	CCC+	CCC+	B-	05/06/20
iQera Group SAS	Missed Principal	France	Financial institutions	663.3	10/02/24	B	B+	BB-	11/28/18
LifeScan Global Corp.	Missed Principal/Interest	U.S.	Health care/chemicals	1,705.2	10/07/24	CCC+	-	CCC+	05/30/23
Accuride Corp.	Chapter 11	U.S.	Aerospace/automotive/capital goods/metal	363.1	10/10/24	CCC+	CCC+	B	07/21/10
CareerBuilder LLC	Distressed Exchange	U.S.	Leisure time/media	415.0	10/10/24	CCC-	-	CCC-	05/31/23
Reception Purchaser LLC	Distressed Exchange	U.S.	Transportation	149.0	10/14/24	B	-	B	04/20/22

Table 8

2024 global publicly rated corporate defaults (cont.)

Company name	Reason for default	Country	Industry	Debt amount outstanding (mil. \$)	Default date	Rating one year before default	Rating three years before default	First rating	Date of first rating
WellPath Holdings Inc.	Missed Principal/Interest	U.S.	Health care/chemicals	610.0	10/14/24	CCC+	B-	B-	09/05/18
Sprint HoldCo B.V.	Distressed Exchange	Netherlands	Leisure time/media	646.8	10/15/24	B-	-	B	10/04/22
WideOpenWest Finance LLC	Distressed Exchange	U.S.	Telecommunications	980.0	10/18/24	BB-	B	B	10/03/06
American Tire Distributors Inc.	Chapter 11	U.S.	Aerospace/automotive/capital goods/metal	1,000.0	10/24/24	B-	B-	B-	01/14/19
Exactech Inc.	Chapter 11	U.S.	Health care/chemicals	320.0	11/01/24	CCC	CCC+	B-	01/25/18
CMG Media Corp.	Distressed Exchange	U.S.	Leisure time/media	3,494.0	11/04/24	B	B	B	12/02/19
Franchise Group Inc.	Chapter 11	U.S.	Consumer/service sector	1,425.0	11/06/24	B	B+	B+	10/27/20
Sensience, Inc.	Distressed Exchange	U.S.	Aerospace/automotive/capital goods/metal	535.0	11/12/24	CCC	-	B-	05/02/22
Dish Network Corp.	Distressed Exchange	U.S.	Telecommunications	8,500.0	11/14/24	CCC+	B-	B-	05/12/94
Spirit Airlines Inc.	Chapter 11	U.S.	Transportation	0.0	11/18/24	B	B	BB-	07/21/15
Dodge Construction Network LLC	Distressed Exchange	U.S.	Consumer/service sector	625.0	11/21/24	B-	-	B-	01/25/22
H-Food Holdings LLC	Chapter 11	U.S.	Consumer/service sector	2,624.5	11/22/24	CCC+	B-	B	04/15/14
LaserShip Inc.	Distressed Exchange	U.S.	Transportation	880.0	11/22/24	CCC+	B-	B-	10/06/21
CD&R Vialto UK Intermediate 3 Ltd.	Missed Interest	U.K.	Consumer/service sector	0.0	11/26/24	B-	-	B-	04/11/22
FinThrive Software Intermediate Holdings Inc.	Distressed Exchange	U.S.	Health care/chemicals	1,900.0	11/26/24	CCC	-	CCC	11/21/23
Congruex Group LLC	Missed Interest	U.S.	Aerospace/automotive/capital goods/metal	545.0	12/02/24	B	-	B	04/07/22
Empire Today LLC	Distressed Exchange	U.S.	Consumer/service sector	595.0	12/11/24	CCC+	B	B	02/16/11
Veritas Holdings Ltd.	Distressed Exchange	Bermuda	High tech/computers/office equipment	3,075.0	12/18/24	CCC+	B-	B-	02/14/19
KNS Holdco LLC	Distressed Exchange	U.S.	Consumer/service sector	662.0	12/19/24	-	-	CCC+	01/25/24
SWF Holdings I Corp.	Distressed Exchange	U.S.	Consumer/service sector	2,375.0	12/19/24	CCC+	B-	B-	09/08/21
GrafTech International Ltd.	Distressed Exchange	U.S.	Aerospace/automotive/capital goods/metal	3,200.0	12/23/24	B+	BB-	BB-	07/20/95
iHeartCommunications Inc.	Distressed Exchange	U.S.	Leisure time/media	6,051.0	12/23/24	B	-	B+	02/28/22

Table 8

2024 global publicly rated corporate defaults (cont.)

Company name	Reason for default	Country	Industry	Debt amount outstanding (mil. \$)	Default date	Rating one year before default	Rating three years before default	First rating	Date of first rating
Container Store Group Inc. (The)	Chapter 11	U.S.	Consumer/service sector	200.0	12/24/24	B	B	B	11/15/13

Table 9

One-year global corporate default rates by rating level

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC/C
1981	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.28	0.00	0.00
1982	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.70	0.00	0.00	2.86	7.04	2.22	2.33	8.33	21.43
1983	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.39	2.13	0.00	1.59	1.25	10.00	5.26	6.67
1984	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.45	0.00	0.00	1.61	1.49	2.17	3.57	8.33	25.00
1985	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59	1.49	1.37	2.63	13.11	8.33	15.38
1986	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.00	0.79	0.00	1.79	1.19	0.00	5.29	12.16	17.07	23.08
1987	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	1.33	5.95	6.98	12.28
1988	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.33	2.02	4.50	10.00	20.37
1989	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.89	0.80	0.00	0.00	0.00	2.04	0.43	7.80	5.13	33.33
1990	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	1.10	2.74	3.09	4.50	4.89	12.26	22.58	31.25
1991	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.75	0.00	3.64	1.12	1.05	8.72	16.25	32.43	33.87
1992	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	14.93	20.83	30.19
1993	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.96	0.00	1.30	5.88	4.17	13.33
1994	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.00	1.83	6.58	3.13	16.67
1995	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.00	1.57	1.12	2.76	8.00	7.50	28.00
1996	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.56	2.35	3.74	3.85	8.00
1997	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.35	0.00	0.00	0.00	0.41	0.72	5.34	14.58	12.00
1998	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	1.05	0.67	1.59	0.73	2.62	7.51	9.46	42.86
1999	0.00	0.00	0.00	0.36	0.00	0.24	0.28	0.00	0.27	0.31	0.56	1.33	0.91	4.46	10.41	15.60	33.82
2000	0.00	0.00	0.00	0.00	0.00	0.24	0.58	0.00	0.25	0.89	0.00	0.81	2.07	5.83	9.92	11.61	35.96
2001	0.00	0.00	0.00	0.00	0.57	0.24	0.00	0.23	0.47	0.27	0.51	1.19	5.59	5.61	16.95	22.46	45.45
2002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.08	0.85	1.06	1.52	1.74	4.78	3.25	10.00	19.70	44.19
2003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.53	0.48	0.95	0.28	1.72	5.24	9.45	32.53
2004	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.67	0.53	0.47	2.36	2.84	15.83
2005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.38	0.00	0.51	0.79	2.66	2.94	9.02
2006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.50	0.55	0.81	1.56	13.33
2007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.24	0.19	0.00	0.90	15.24
2008	0.00	0.00	0.43	0.40	0.32	0.21	0.60	0.19	0.61	0.72	1.23	0.66	0.69	3.15	3.47	7.56	27.27

Table 9

One-year global corporate default rates by rating level (cont.)

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC/C
2009	0.00	0.00	0.00	0.00	0.29	0.40	0.00	0.42	0.19	1.13	0.00	1.05	0.99	6.00	10.82	17.71	49.46
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.37	0.57	0.00	0.74	2.14	22.83
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.42	1.28	4.53	16.54
2012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.61	1.45	3.53	27.52
2013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.77	0.83	4.11	24.67
2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.33	2.77	17.42
2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.22	1.75	2.03	4.33	26.51
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.24	0.00	1.11	0.92	2.33	10.78	33.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.41	0.44	2.89	26.56
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	1.89	27.18
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	1.18	0.68	3.35	29.61
2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.00	1.99	1.87	2.14	6.89	47.88
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16	0.26	0.42	10.96
2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.60	1.03	0.58	1.77	13.84
2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.14	0.00	0.00	0.30	0.42	0.00	0.39	2.97	30.89
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.46	0.45	1.75	2.60	28.36
Average	0.00	0.00	0.01	0.02	0.04	0.04	0.06	0.11	0.19	0.22	0.44	0.64	1.10	1.96	5.27	8.07	24.54
Median	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.57	1.27	3.52	5.20	25.75
Standard deviation	0.00	0.00	0.06	0.08	0.12	0.10	0.19	0.27	0.33	0.40	0.82	0.80	1.56	1.98	4.84	7.26	11.60
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	0.00	0.00	0.43	0.40	0.57	0.40	0.77	1.08	1.45	1.39	3.64	3.09	7.04	8.72	16.95	32.43	49.46

Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

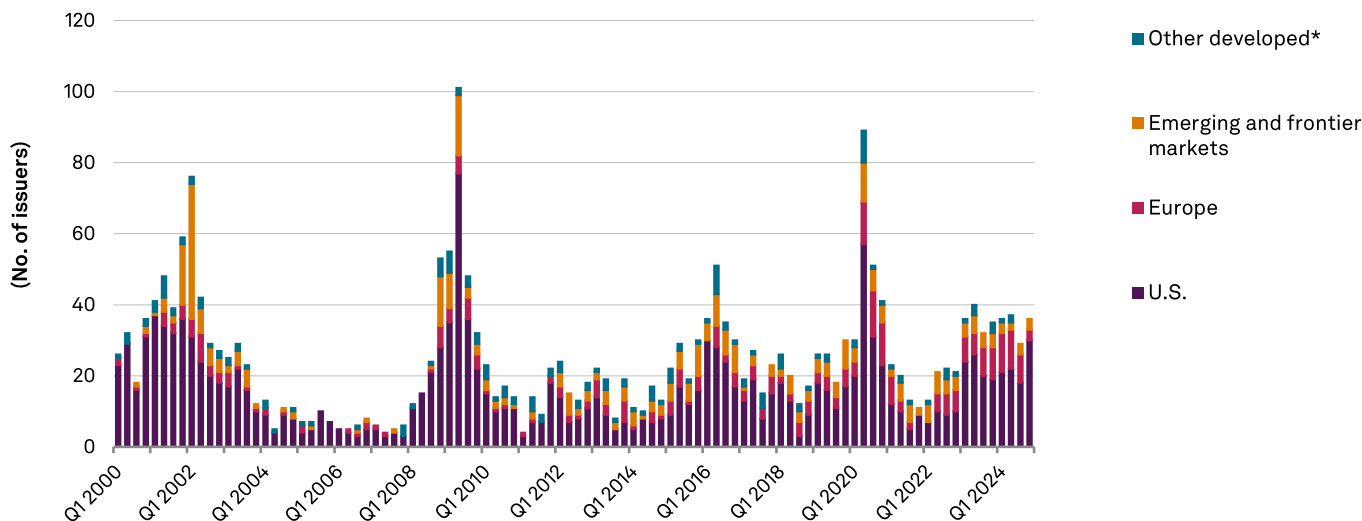
Quarterly Default Trends

In 2024, quarterly defaults peaked globally in the second quarter (with 37) before slowing slightly in the second half of the year.

However, default rates diverged during this period by region. The quarterly speculative-grade default rate in Europe fell in the second half, while the speculative-grade default rate continued to climb in the U.S. (to 1.8% in the fourth quarter) and in emerging markets (to 0.5% in the fourth quarter) (see charts 14-16).

Chart 14

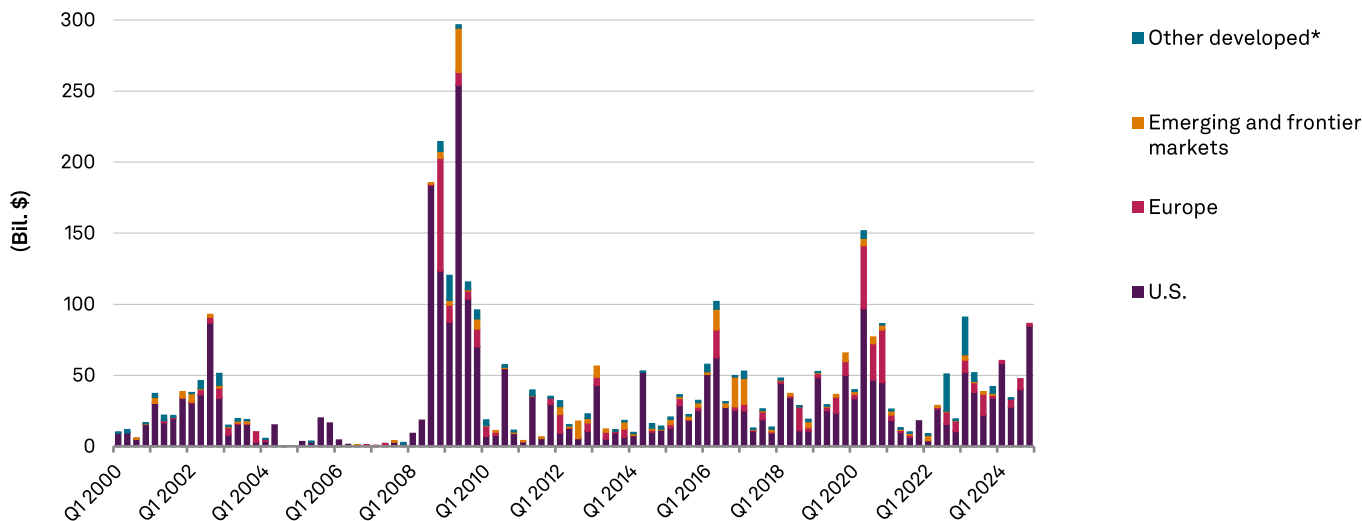
Quarterly corporate defaults



Excludes defaults that were not rated one quarter before default. *The "Other developed" category includes Australia, Brunei Darussalam, Canada, Israel, Japan, Republic of Korea, New Zealand, and Singapore. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Chart 15

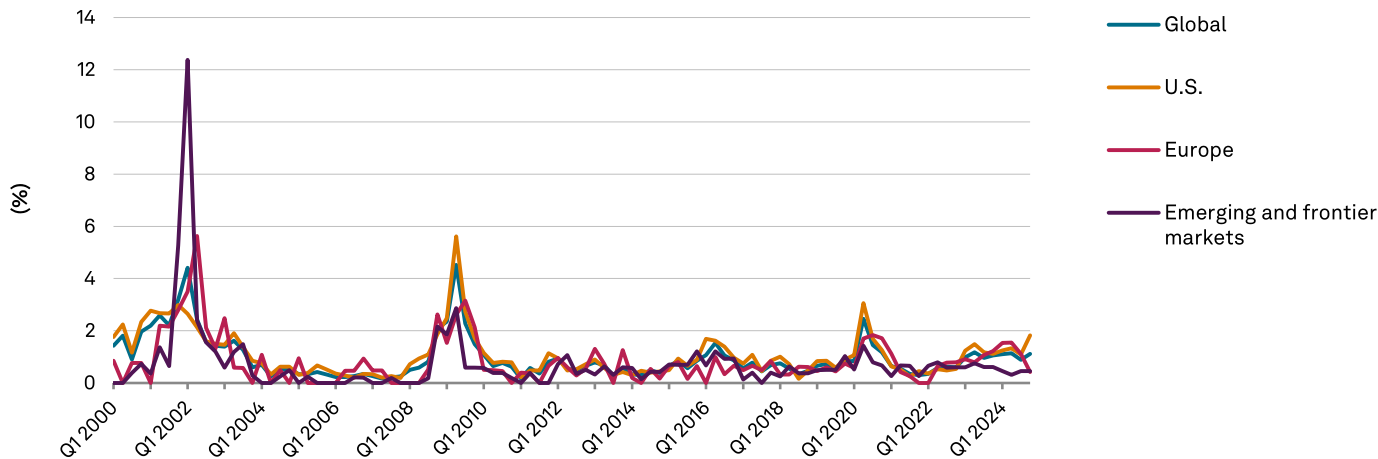
Quarterly global corporate defaulters' debt amounts outstanding



*The "Other developed" category includes Australia, Brunei Darussalam, Canada, Israel, Japan, Republic of Korea, New Zealand, and Singapore. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Chart 16

Quarterly speculative-grade default rates by region



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Lower Ratings Remain Vulnerable To Default

There exists a correlation between initial ratings and time to default (see table 10). Higher initial ratings correspond with both lower rates of default and (for those that do default) a longer amount of time between initial rating and default.

For example, for the entire population of defaulters in this study (1981-2024), 43.2% of issuers initially rated 'CCC+' or lower eventually defaulted (with an average time to default of 2.0 years), while issuers originally rated in the 'B' category had a lower lifetime default rate (21.2%) and a longer average time to default (5.2 years).

By contrast, issuers initially rated in the 'A' category exhibited a much lower lifetime default rate (3.2%), with a much longer average time to default (14.7 years).

The same relationship between initial rating and default is maintained when looking at the post-initial rating (see table 11). Broadly speaking, the average and median times to default for each rating category are longer when based on the initial rating than when they're based on subsequent ratings.

In both cases, the standard deviation of the times to default rises with higher rating levels. This reflects the lower frequency and higher degree of variation among the higher-rated issuers that eventually defaulted.

Of all of the issuers that defaulted in the 1981-2024 period, only eight that were initially rated 'AAA' have defaulted: Macy's Inc., Ally Financial Inc., Ambac Assurance Corp., Mutual Benefit Life Insurance Co., Executive Life Insurance Co. CA, Confederation Life Insurance Co., Motors Liquidation Co. (formerly known as General Motors Corp.), and Eastman Kodak Co. These issuers averaged 18 years between initial rating and default, but with a higher standard deviation than what we see in the other rating categories.

By contrast, issuers that defaulted within one year of an initial rating are highly concentrated in the lowest rating categories. Of the 317 companies that defaulted within 12 months of an initial rating, 94.4% were rated in either the 'B' or 'CCC'/'C' categories (see table 12).

Table 10

Time to default from original rating for global corporate defaulters, 1981-2024

Original rating	Defaults (no.)	Average time from original rating (years)*	Median time from original rating (years)	Standard deviation of time from original rating (years)	Range (years)
AAA	8	18.0	18.5	11.4	23.0
AA	33	17.2	19.3	10.5	37.8
A	102	14.7	11.5	9.9	40.4
BBB	239	9.7	7.7	7.1	36.1
BB	701	7.3	5.5	6.0	43.0
B	1,971	5.2	3.9	4.4	38.1
CCC/C	502	2.0	1.2	2.5	17.4
Total	3,556	5.9	4.0	5.8	43.2

*Or Dec. 31, 1980, whichever is later. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 11

Time to default from post-original ratings for global corporate defaulters, 1981-2024

Rating	Average years from rating category	Median years from rating category	Standard deviation of years from rating category
AAA	27.4	27.7	10.0
AA	14.9	15.8	9.4
A	11.9	10.0	8.7
BBB	8.8	6.9	7.3
BB	6.3	4.4	6.0
B	3.4	2.0	4.1
CCC/C	0.9	0.4	1.7
NR	5.5	3.2	6.1
Total	3.4	1.3	5.1

NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 12

Cumulative defaulters by time horizon from original rating for global corporate entities, 1981-2024**Issuers defaulting within time frame (no.)**

Time frame	AAA	AA	A	BBB	BB	B	CCC/C	Total
One year	0	0	0	3	16	100	222	341
Three years	0	1	6	29	155	711	409	1,311
Five years	0	3	13	72	314	1,244	459	2,105
Seven years	2	6	28	108	431	1,563	479	2,617
Total	8	33	102	239	701	1,971	502	3,556

Share of total defaults per time frame (%)

Time frame	AAA	AA	A	BBB	BB	B	CCC/C
One year	0.0	0.0	0.0	0.9	4.7	29.3	65.1
Three years	0.0	0.1	0.5	2.2	11.8	54.2	31.2
Five years	0.0	0.1	0.6	3.4	14.9	59.1	21.8
Seven years	0.1	0.2	1.1	4.1	16.5	59.7	18.3
Total	0.2	0.9	2.9	6.7	19.7	55.4	14.1

From original rating or Dec. 31, 1980, whichever is later. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 13 shows the number of cumulative defaults for all subsequent ratings (post-initial ratings). The total count is different from table 12 since an issuer typically has multiple post-original ratings, but it can only have one initial rating. Because of this, issuers are generally counted multiple times in table 13.

Times to default in table 13 are from the date that each entity received a unique rating in its path to default. In contrast, table 21 reports transition-to-default rates using the static pool

methodology (which calculates movements to default from the beginning of each static pool year).

The data in table 13 also differs from the default rates in table 24, which are based on the static pool methodology. (For more information on methodologies and definitions, see Appendix I.)

Table 13

Cumulative defaulters by time horizon from post-original ratings for global corporate entities, 1981-2024

Issuers defaulting within time frame (no.)

Time frame	AAA	AA	A	BBB	BB	B	CCC/C	NR	Total
One year	0	0	10	73	189	1,169	3,332	149	4,922
Three years	0	7	42	151	492	2,386	4,083	346	7,507
Five years	0	9	63	215	694	3,012	4,274	455	8,722
Seven years	0	15	78	283	847	3,314	4,334	527	9,398
Total	4	51	230	566	1,284	3,821	4,401	722	11,079

Share of total defaults per time frame (%)

Time frame	AAA	AA	A	BBB	BB	B	CCC/C	NR
One year	0.0	0.0	0.2	1.5	3.8	23.8	67.7	3.0
Three years	0.0	0.1	0.6	2.0	6.6	31.8	54.4	4.6
Five years	0.0	0.1	0.7	2.5	8.0	34.5	49.0	5.2
Seven years	0.0	0.2	0.8	3.0	9.0	35.3	46.1	5.6
Total	0.0	0.5	2.1	5.1	11.6	34.5	39.7	6.5

NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Over longer time horizons, the incidence of defaults from low rating categories becomes even more pronounced (see table 14). For example, of the 421 defaults recorded in the most recent five-year pool that began January 2020, 97.7% of the defaulters were rated speculative grade on Jan. 1, 2020.

The nine publicly rated investment-grade defaults from this period are listed in table 15. While each of these nine issuers was rated investment grade as of Jan 1, 2020, five of these issuers were speculative grade a year or more before their default.

Table 14

Defaults and survivor rates in the latest one-year, three-year, and five-year pools

Rating	--Latest one-year--			--Latest three-year--			--Latest five-year--		
	Ratings as of Jan. 1, 2024 (no.)	Defaults through December 2024 (no.)	Non-default rate (%)	Ratings as of Jan. 1, 2022 (no.)	Defaults through December 2024 (no.)	Non-default rate (%)	Ratings as of Jan. 1, 2020 (no.)	Defaults through December 2024 (no.)	Non-default rate (%)
Global									
AAA	7	0	100.0	8	0	100.0	8	0	100.0
AA	285	0	100.0	276	0	100.0	324	0	100.0
A	1,399	0	100.0	1,393	0	100.0	1,431	0	100.0
BBB	1,848	1	99.9	1,862	6	99.7	1,823	10	99.5
BB	1,190	2	99.8	1,264	16	98.7	1,283	43	96.6
B	1,744	30	98.3	2,086	139	93.3	2,056	222	89.2
CCC/C	342	97	71.6	318	112	64.8	236	151	36.0
Nonfinancials									
AAA	4	0	100.0	5	0	100.0	5	0	100.0
AA	77	0	100.0	72	0	100.0	91	0	100.0
A	561	0	100.0	556	0	100.0	606	0	100.0
BBB	1,270	1	99.9	1,267	4	99.7	1,236	8	99.4
BB	929	2	99.8	970	12	98.8	990	35	96.5
B	1,570	28	98.2	1,866	129	93.1	1,801	207	88.5
CCC/C	310	92	70.3	295	107	63.7	233	149	36.1
Financials									
AAA	3	0	100.0	3	0	100.0	3	0	100.0
AA	208	0	100.0	204	0	100.0	233	0	100.0
A	838	0	100.0	837	0	100.0	825	0	100.0
BBB	578	0	100.0	595	2	99.7	587	2	99.7
BB	261	0	100.0	294	4	98.6	293	8	97.3
B	174	2	98.9	220	10	95.5	255	15	94.1
CCC/C	32	5	84.4	23	5	78.3	3	2	33.3

Note: The totals included may differ from the counts in table 1 because defaults that are not rated at the beginning of the pool year are excluded. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 15

Investment-grade defaults in the five-year 2020 static pool

Company	Country	Industry	Default date	Rating one year before default	Rating three years before default	First rating	Date of first rating	Year of default
Adler Group S.A.	Luxembourg	Real estate	04/17/23	B-	BBB-	BBB-	11/28/18	2023

Table 15

Investment-grade defaults in the five-year 2020 static pool (cont.)

Company	Country	Industry	Default date	Rating one year before default	Rating three years before default	First rating	Date of first rating	Year of default
Atos SE	France	High technology/computers/office equipment	07/26/24	BB	BBB+	BBB+	10/22/18	2024
Big Lots Inc.	U.S.	Consumer/service sector	09/09/24	NR	NR	BBB	10/01/97	2024
Office Properties Income Trust	U.S.	Real estate	06/21/24	BB	BBB-	BBB-	09/21/10	2024
Petrofac Ltd.	Jersey	Energy and natural resources	05/17/24	BB-	NR	BBB+	05/17/13	2024
Ruby Pipeline LLC	U.S.	Energy and natural resources	04/01/22	B-	BBB-	BBB-	02/10/12	2022
SVB Financial Group	U.S.	Financial institutions	03/17/23	BBB	BBB	BBB-	12/08/03	2023
Samhallsbyggnadsbolaget i Norden AB (publ)	Sweden	Real estate	03/27/24	BBB-	BBB-	BB	01/15/18	2024
Silicon Valley Bank	U.S.	Financial institutions	03/10/23	BBB+	BBB+	BBB	12/08/03	2023

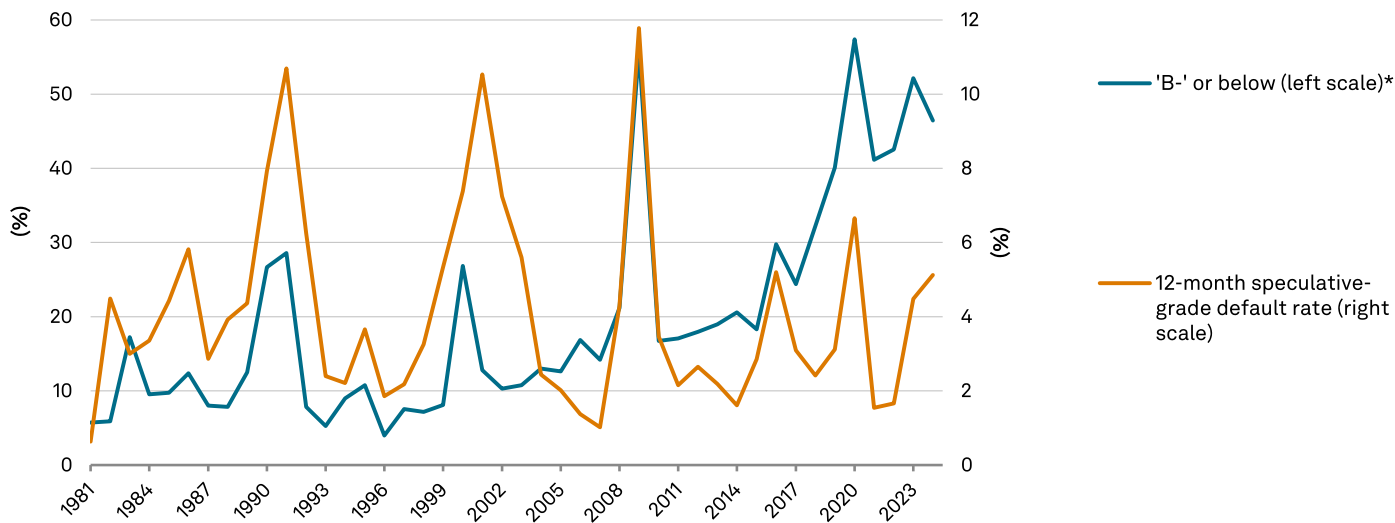
Excludes confidentially rated defaults. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

The proportion of newly assigned speculative-grade ratings at 'B-' or lower in the U.S. and the U.S. speculative-grade default rate show some correlation historically (see chart 17).

The growth of speculative-grade ratings, particularly ratings of 'B-' or lower, is a sign of the weakening credit quality of the pool of rated issuers, with the growing population of speculative-grade ratings indicating fundamentally higher default risk. The share of new speculative-grade issuers rated 'B-' or lower fell to 46.4% in 2024 from 52.2% the prior year, but that's still much higher than the share during most of the observed 44-year period.

Chart 17

Speculative-grade origination trends and default rate: U.S. and tax havens



Data through Dec. 31, 2024. The "U.S. and tax havens" category includes the U.S., Bermuda, and Cayman Islands. *'B-' or below ratings calculated as a share of total speculative grade. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Variation By Industry: Leisure Time/Media Led Default Rates

There were defaults in 2024 in nearly all of the sectors we track, but they were heavily concentrated in the consumer/service sector (33 defaults). Seven sectors had a 2024 default rate above 2%, and eight sectors had a 2024 default rate that was above its long-term weighted average (see table 16).

Table 16

Global corporate default rates by industry

(%)	2024	2023	Weighted average, 1981-2024	Median	Standard deviation	Minimum	Maximum
Aerospace/automotive/capital goods/metal	2.42	2.64	2.00	1.39	1.87	0.00	9.33
Consumer/service sector	3.24	3.33	2.46	1.86	1.59	0.00	6.29
Energy and natural resources	1.09	0.84	3.02	1.69	2.84	0.00	13.65
Financial institutions	0.53	0.60	0.61	0.40	0.64	0.00	2.64
Forest and building products/homebuilders	3.32	1.60	2.34	1.50	2.82	0.00	14.95
Health care/chemicals	4.48	4.56	1.67	0.94	1.39	0.00	4.56
High technology/computers/office equipment	2.45	0.59	1.23	0.94	1.38	0.00	4.82
Insurance	0.00	0.00	0.23	0.12	0.87	0.00	4.76
Leisure time/media	4.89	5.64	3.41	2.22	3.12	0.00	16.82
Real estate	0.91	0.60	0.82	0.00	2.54	0.00	12.00
Telecommunications	4.57	3.45	2.47	1.02	3.41	0.00	17.67
Transportation	2.04	3.56	2.11	1.94	1.62	0.00	6.45
Utilities	0.35	0.35	0.43	0.18	0.73	0.00	4.52

Includes investment-grade and speculative-grade rated entities. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

The leisure time/media sector led all sectors with a 4.9% default rate in 2024, which was above its 3.4% long-term weighted average but an improvement on the 5.6% default rate in 2023. Consumer-facing sectors--including leisure time/media as well as the consumer/service sector--confronted challenges related to shifting demand as consumers adjusted their spending in response to inflation.

There's also greater default risk in the leisure time/media sector than in other sectors since it has the highest concentration of speculative-grade issuers.

Notably, the health care/chemicals sector saw the biggest gap between its 2024 default rate and its historical average (4.5% and 1.7%, respectively). Elevated costs from staffing shortages and higher debt burdens have strained the credit quality of many of the sector's lower-rated issuers.

As for sectors with improving default rates, the biggest surprises were the energy and natural resources sector (where the default rate fell to 1.1% in 2024, well below the 3.0% long-term average) and the transportation sector (where the default rate fell to 2.0% in 2024 from 3.6%).

Across sectors, the share of issuers that were rated speculative grade varied widely. Leisure time/media had the highest concentration of speculative-grade issuers (82.5%), while the insurance sector had the lowest (10.9%) (see chart 18).

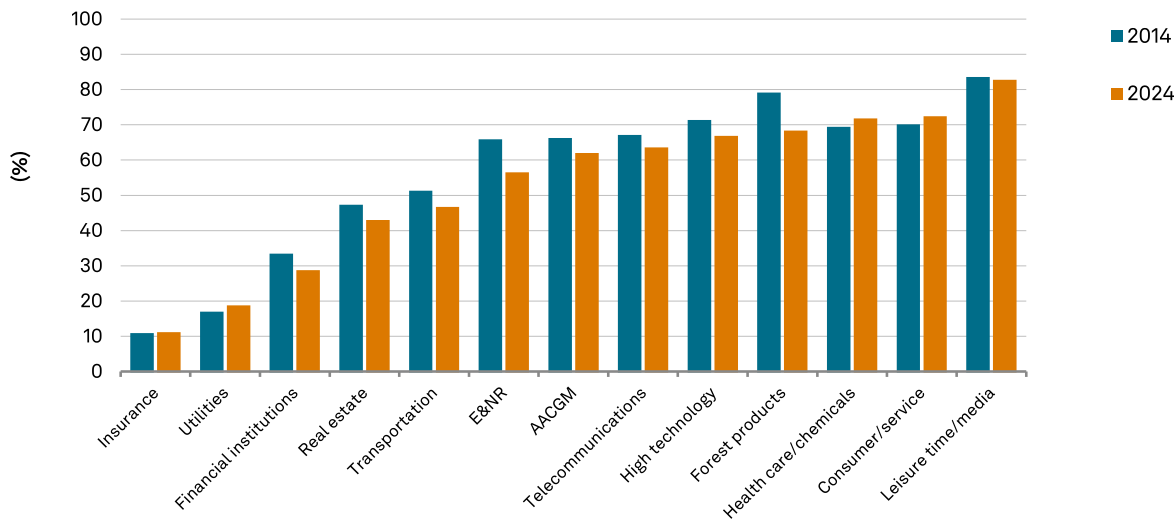
To some extent, sectors with a higher concentration of speculative-grade issuers can be expected to exhibit higher default rates over time. In five sectors, the share of speculative-grade ratings has grown over the past decade: insurance, utilities, consumer/service, health care/chemicals, and leisure time/media.

Broad-sector default rates reflect some of the difference between the rating distributions within financial and nonfinancial sectors (see table 17). The speculative-grade share of nonfinancial corporate issuers has tended to be higher than that of financial services issuers. This is reflected in the higher average default rate for nonfinancial companies--including over the one-, three, and 10-year horizons--than for financial services companies. The 0.52% one-year average default rate for the financial services sector is considerably lower than the 1.87% default rate for the nonfinancial sector.

In addition, the annual default rate for financial services companies has remained below 2% since 1990 (and below 1% for the past 15 years), while the default rate for nonfinancial companies was above 1% in 14 of the past 15 years (see chart 19). The gap in default rates between financial and nonfinancial issuers is even wider over longer time horizons (see chart 20).

Chart 18

Speculative-grade ratings as a share of total ratings, by industry



Figures reflect year-end. High technology--High technology/computers/office equipment. Forest products--Forest and building products/homebuilders. E&NR--Energy and natural resources. AACGM--Aerospace/automotive/capital goods/metal. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights. Copyright © 2025 by Standard & Poor's Financial Services LLC. All rights reserved.

Table 17

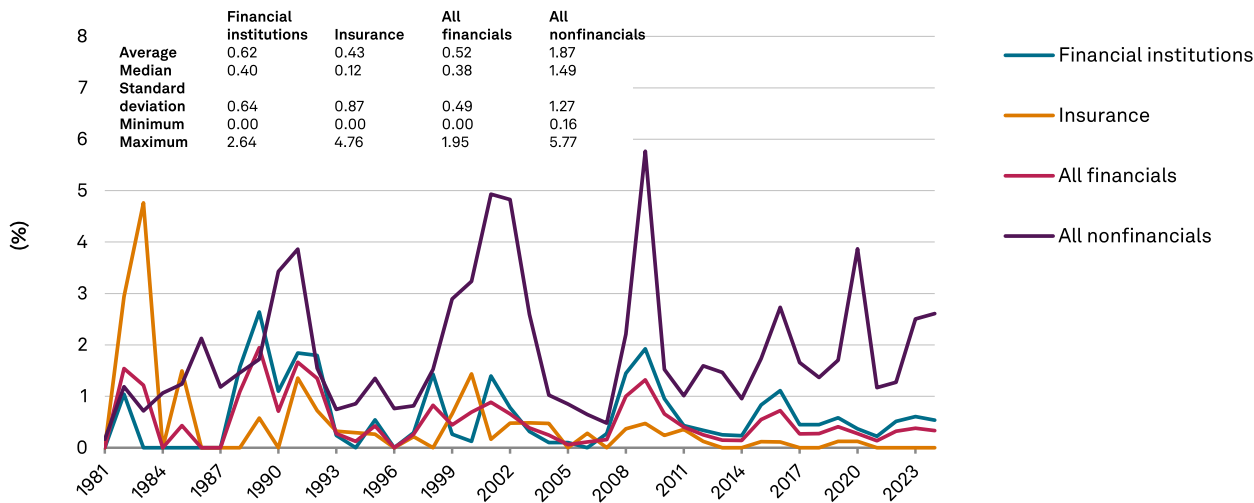
Cumulative global corporate default rates by sector

	2024	2023	Average, 1981-2024	Median	Standard deviation	Minimum	Maximum
Financial institutions							
One-year	0.53	0.60	0.62	0.40	0.64	0.00	2.64
Three-year	1.53	1.25	1.76	1.28	1.41	0.00	6.16
10-year	4.16	3.78	4.46	4.02	2.16	1.68	9.35
Insurance							
One-year	0.00	0.00	0.43	0.12	0.87	0.00	4.76
Three-year	0.00	0.00	1.30	0.79	1.61	0.00	7.14
10-year	0.46	0.48	4.10	3.97	3.31	0.24	14.71
All financials							
One-year	0.33	0.38	0.52	0.38	0.49	0.00	1.95
Three-year	0.97	0.78	1.55	1.13	1.07	0.18	4.67
10-year	2.70	2.47	4.28	3.30	2.15	1.75	8.46
All nonfinancials							
One-year	2.61	2.50	1.87	1.49	1.27	0.16	5.77
Three-year	5.01	3.95	5.15	4.24	2.66	1.89	12.33
10-year	10.78	9.65	11.19	10.57	3.00	6.99	19.45

Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Chart 19

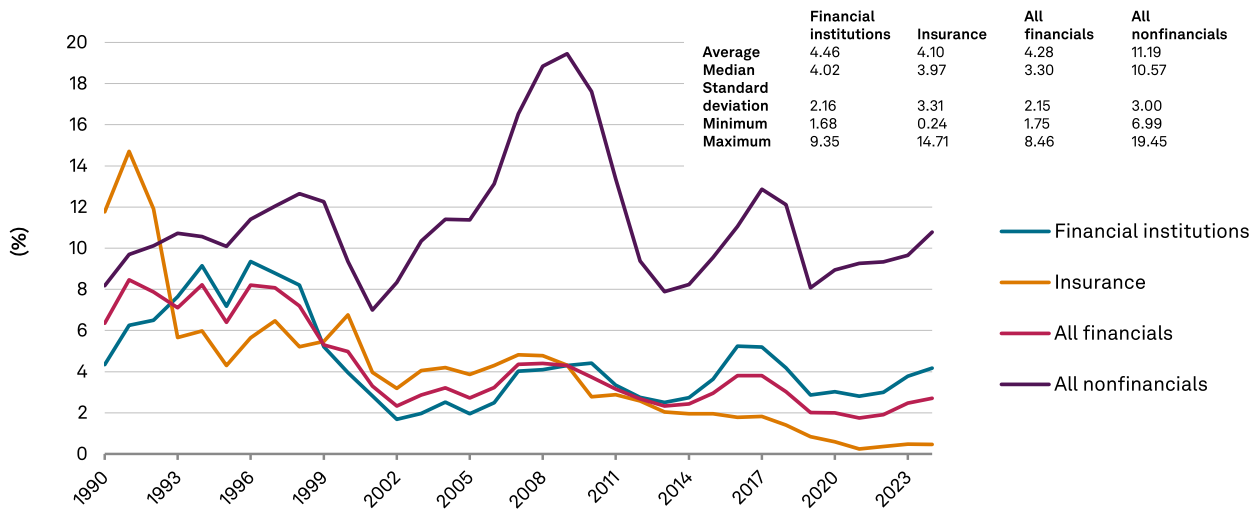
One-year default rates by broad sector



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Chart 20

10-year default rates by broad sector



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Table 18

Time to default from original rating, by industry

	Median original rating, defaulters	Median original rating, industry	Defaults (no.)	Average time from original rating (years)	Median time from original rating (years)	Standard deviation of time from original rating (years)	Range (years)
Aerospace/automotive/capital goods/metal	B+	B+	459	6.4	4.6	5.8	36.2
Consumer/service sector	B+	B+	711	6.5	4.4	6.5	41.7
Energy and natural resources	B	B+	456	4.7	3.4	4.8	35.4
Financial institutions	B+	BBB	264	6.0	4.0	5.9	28.6
Forest and building products/homebuilders	B+	B+	194	6.2	4.5	5.4	28.2
Health care/chemicals	B	B+	232	5.8	3.9	5.9	37.8
High technology/computers/office equipment	B+	B+	120	5.7	3.9	6.0	41.7
Insurance	BBB+	A-	75	7.9	6.6	6.3	28.6
Leisure time/media	B	B+	465	5.5	3.8	5.3	34.1
Real estate	B+	BB+	79	4.5	3.1	4.0	21.4
Telecommunications	B	B+	216	4.5	3.1	5.3	43.1

Table 18

Time to default from original rating, by industry (cont.)

	Median original rating, defaulters	Median original rating, industry	Defaults (no.)	Average time from original rating (years)	Median time from original rating (years)	Standard deviation of time from original rating (years)	Range (years)
Transportation	B+	BB	187	6.3	4.0	6.3	36.3
Utilities	BB	BBB+	98	6.7	4.5	6.5	30.4
Total	B+	BB-	3,556	5.9	4.0	5.8	43.2

Times to default from original rating or Dec. 31, 1980, whichever is later. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 19

Time to default from post-original ratings, by industry

(Years)	Average time to default	Median time to default	Standard deviation of time to default
Aerospace/automotive/capital goods/metal	3.9	1.7	5.4
Consumer/service sector	4.0	1.8	5.7
Energy and natural resources	2.7	1.0	4.2
Financial institutions	3.2	1.1	4.8
Forest and building products/homebuilders	2.8	1.2	4.0
Health care/chemicals	3.3	1.3	5.0
High technology/computers/office equipment	4.0	1.7	5.5
Insurance	3.1	1.7	3.7
Leisure time/media	3.1	1.2	4.4
Real estate	2.3	1.0	3.7
Telecommunications	2.6	0.7	5.3
Transportation	4.4	1.6	6.0
Utilities	3.3	0.9	5.2
Total	3.4	1.3	5.1

Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Variations By Region

While slowing economic growth, rising interest rates, and tighter financing conditions were common themes for corporate credit globally in 2023 and 2024, default rate trends varied by region. For example, in 2024, the U.S. had the highest speculative-grade default rate of the regions we track, at 5.1% (up 0.6 percentage points from 2023), compared with Europe's 4.5% default rate (which was up a more modest 0.9 percentage points).

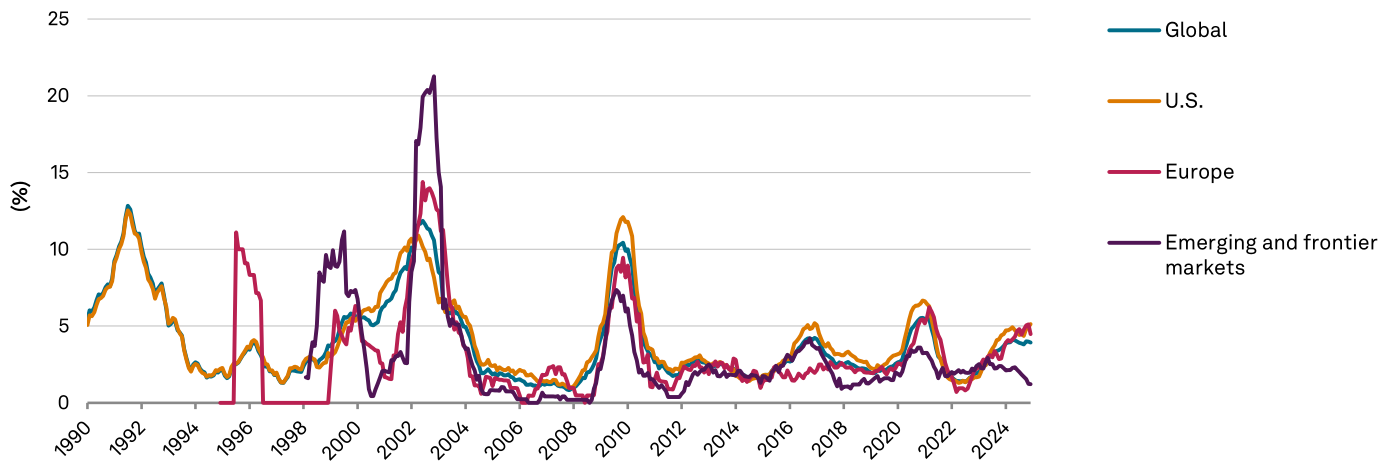
But this could be an example of the impact of sustained high interest rates and the increased use of distressed exchanges--the U.S. default rate was higher despite resilient U.S. economic growth (compared with sub-1% growth in Europe).

The speculative-grade default rate for emerging and frontier markets fell 1.0 percentage points in 2024, to 1.2% (see chart 21).

Speculative-grade issuers continued to represent a higher share of rated issuers in the U.S. than they do globally. At the end of 2024, 53.7% of rated issuers in the U.S. were speculative grade, versus 43.9% in Europe and 47.6% globally (see charts 22-24).

Chart 21

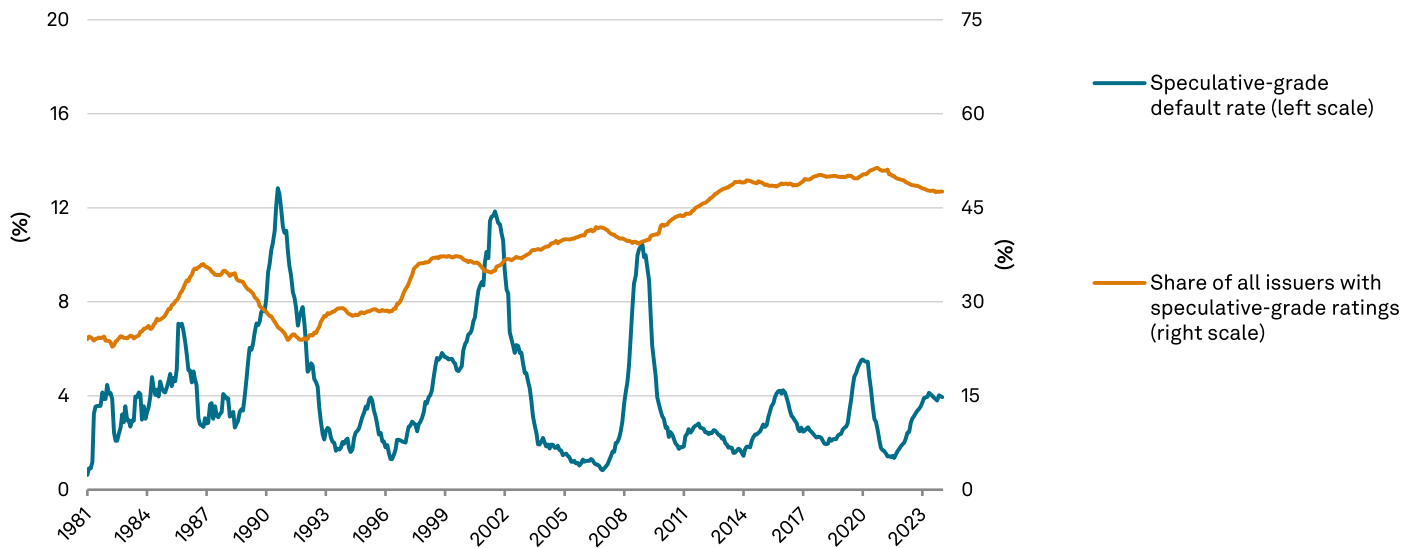
Trailing-12-month speculative-grade corporate default rate



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Chart 22

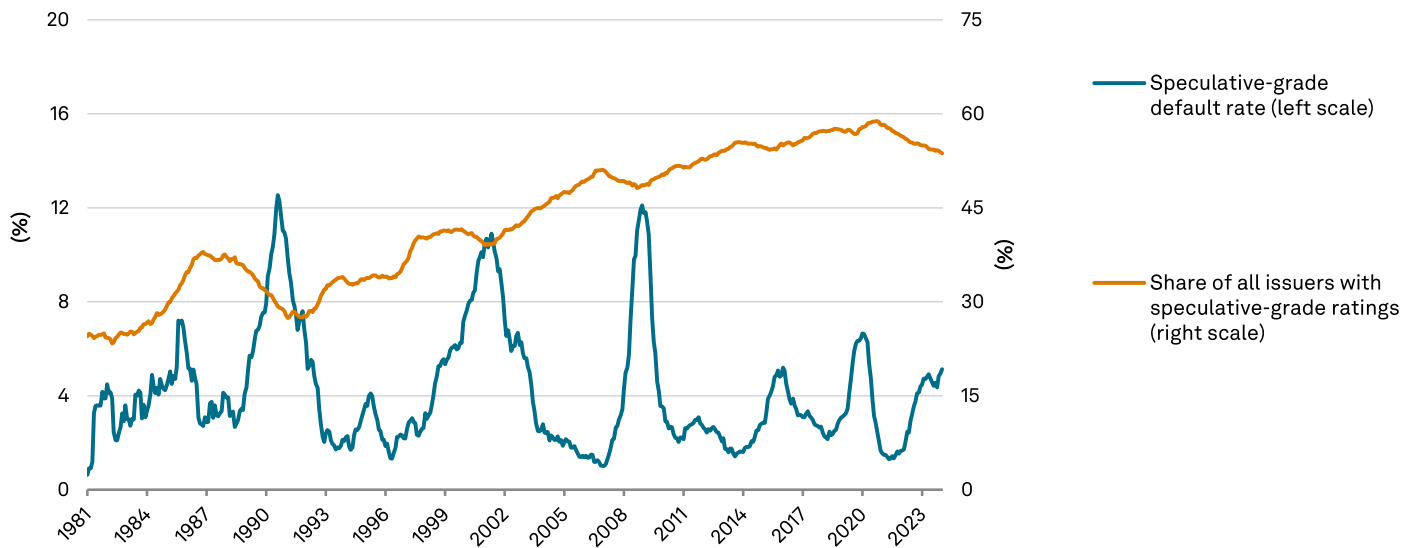
Global speculative-grade corporate default rate versus prevalence of speculative-grade issuers



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Chart 23

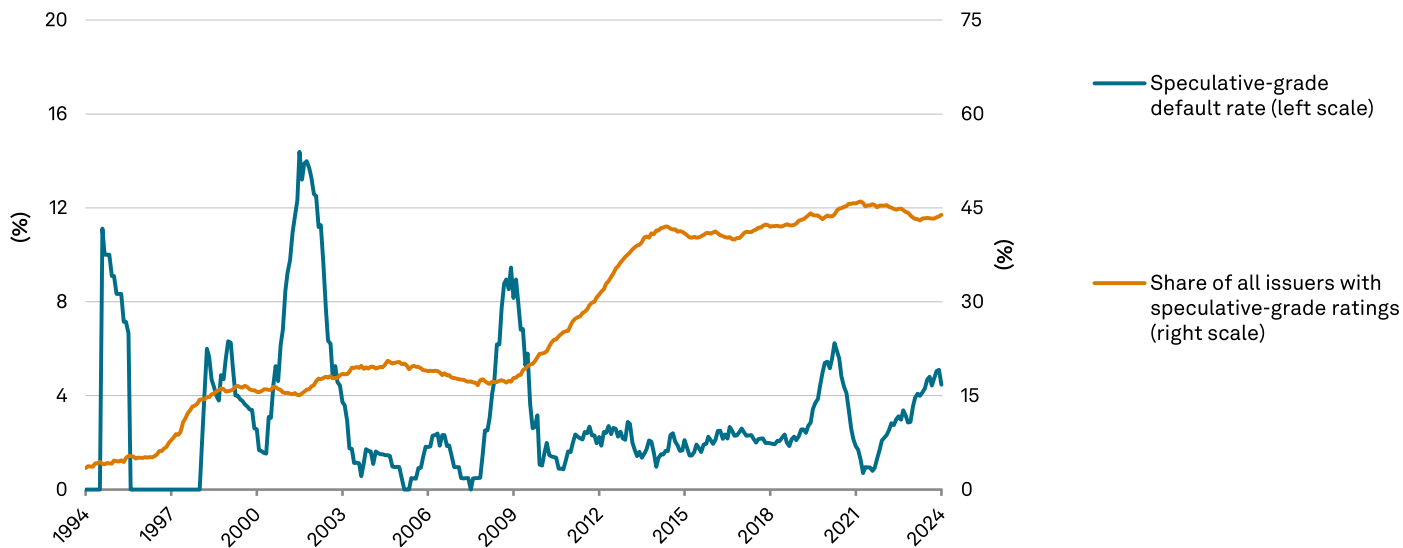
U.S. speculative-grade corporate default rate versus prevalence of speculative-grade issuers



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Chart 24

European speculative-grade corporate default rate versus prevalence of speculative-grade issuers



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Transition And Cumulative Default Rates Demonstrate Ratings Performance

Transition rates, which measure the change in a rating (including both upgrades and downgrades) over a given horizon, are another useful measure of ratings performance. Rating transition rates show that higher ratings tend to be more stable while speculative-grade ratings generally experience more volatility.

Transition rates in 2024 continued to show a strong rank-ordering relationship between ratings and credit risk (see table 20). For instance, 93.7% of issuers rated 'A' at the beginning of 2024 were still rated 'A' at the end of the year, while the comparable share for issuers rated 'B' was only 79.3%. The inverse relationship between higher ratings and defaults can be seen across time horizons and regions.

Transition tables also include default rates for a given time horizon. The default rates in these tables show the rank-ordering power of ratings. There were no defaults in 2024 of issuers rated 'A' or above--the 15th consecutive year with no defaults from these higher rating levels.

Occasional exceptions are usually due to outliers within smaller sample sizes or due to rare default events. For example, even though the default rate for the 'BBB' category among emerging and frontier markets issuers (0.2%) was higher than the corresponding default rate for the 'BB' category in 2024, the relationship still holds globally, where the 'BB' category default rate (0.2%) exceeded the 'BBB' category default rate (0.1%).

Sample size is an important consideration when analyzing transition rates. Subsets of issuers pooled by rating, region, or sector, for example, can become quite small.

For the 1981-2024 period, higher ratings have shown greater stability, on average (see table 21). When analyzing transition matrices that present averages computed over multiple static pools, the standard deviations associated with each transition point in the matrix can be large relative to averages.

One example of the greater stability of higher ratings is that issuers rated 'AAA' were still rated 'AAA' one year later 87.3% of the time, while just 45.1% of issuers in the 'CCC'/'C' category were still rated in that category one year later. This relationship between higher ratings and greater ratings stability holds even over longer time horizons and when broken out by region (see tables 21-22).

The relationship is more discontinuous when we examine rating transitions across rating levels--these variations are, in part, a result of sample sizes (see table 23). For example, 'AA+' rated issuers were still rated 'AA+' one year later 80.9% of the time, while 81.3% of 'AA' rated issuers were still rated 'AA' one year later. In this case, the 'AA+' figure is derived from a much smaller sample than the 'AA' figure is derived from.

Generally, the highest proportions of rating changes for either a rating category or rating level occur at adjacent rating categories and rating levels. Small sample sizes can result in historical default rates that seem counterintuitive. But these default rates do not imply that, for example, 'AAA' rated companies are riskier than 'AA+' rated companies, but rather that both are highly unlikely to default (see tables 24-26 and chart 25).

Table 20

2024 one-year corporate transition rates by region (%)

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
Global									
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	0.00	93.68	3.16	0.00	0.00	0.00	0.00	0.00	3.16
A	0.00	0.86	95.07	2.43	0.00	0.00	0.00	0.00	1.64
BBB	0.00	0.00	2.49	92.53	1.30	0.11	0.05	0.05	3.46
BB	0.00	0.00	0.08	3.61	87.31	2.44	0.25	0.17	6.13
B	0.00	0.00	0.00	0.06	4.59	79.30	3.38	1.72	10.95
CCC/C	0.00	0.00	0.00	0.00	0.00	10.82	46.78	28.36	14.04
U.S.									
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	0.00	93.97	1.72	0.00	0.00	0.00	0.00	0.00	4.31
A	0.00	0.98	94.31	4.12	0.00	0.00	0.00	0.00	0.59
BBB	0.00	0.00	2.81	92.64	1.47	0.00	0.00	0.00	3.08
BB	0.00	0.00	0.19	3.12	87.72	3.31	0.39	0.19	5.07
B	0.00	0.00	0.00	0.00	4.00	78.63	4.11	2.32	10.95
CCC/C	0.00	0.00	0.00	0.00	0.00	11.16	40.93	29.30	18.60
Europe									
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	0.00	92.59	3.70	0.00	0.00	0.00	0.00	0.00	3.70
A	0.00	1.00	95.77	1.24	0.00	0.00	0.00	0.00	1.99
BBB	0.00	0.00	1.56	93.30	1.56	0.00	0.22	0.00	3.35
BB	0.00	0.00	0.00	5.80	81.16	1.93	0.48	0.48	10.14
B	0.00	0.00	0.00	0.00	4.33	80.87	3.64	1.14	10.02
CCC/C	0.00	0.00	0.00	0.00	0.00	10.00	45.71	37.14	7.14
Emerging and frontier markets									
AAA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AA	0.00	96.43	0.00	0.00	0.00	0.00	0.00	0.00	3.57
A	0.00	0.00	97.38	0.44	0.00	0.00	0.00	0.00	2.18
BBB	0.00	0.00	2.92	91.01	1.12	0.45	0.00	0.22	4.27
BB	0.00	0.00	0.00	1.90	90.79	0.81	0.00	0.00	6.50
B	0.00	0.00	0.00	0.42	8.02	78.90	1.69	0.84	10.13
CCC/C	0.00	0.00	0.00	0.00	0.00	4.17	77.08	12.50	6.25

N/A--Not applicable. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 21

Global corporate average transition rates, 1981-2024 (%)

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
One-year									
AAA	87.28	8.92	0.51	0.03	0.10	0.03	0.05	0.00	3.08
	(7.37)	(7.16)	(0.81)	(0.13)	(0.26)	(0.17)	(0.34)	(0.00)	(2.45)
AA	0.45	87.74	7.50	0.44	0.05	0.06	0.02	0.02	3.74
	(0.52)	(5.18)	(4.19)	(0.65)	(0.18)	(0.19)	(0.06)	(0.07)	(1.69)
A	0.02	1.48	89.42	4.64	0.23	0.10	0.01	0.05	4.04
	(0.08)	(1.04)	(4.06)	(2.21)	(0.36)	(0.22)	(0.06)	(0.10)	(1.71)
BBB	0.00	0.07	3.05	87.33	3.21	0.40	0.09	0.14	5.71
	(0.03)	(0.14)	(1.58)	(4.09)	(1.67)	(0.62)	(0.19)	(0.23)	(1.52)
BB	0.01	0.02	0.10	4.44	78.89	6.25	0.50	0.56	9.23
	(0.05)	(0.08)	(0.22)	(1.88)	(4.81)	(3.14)	(0.65)	(0.76)	(2.21)
B	0.00	0.02	0.06	0.14	4.47	75.18	4.79	2.93	12.41
	(0.00)	(0.07)	(0.17)	(0.19)	(1.98)	(3.81)	(2.59)	(2.87)	(2.28)
CCC/C	0.00	0.00	0.07	0.13	0.40	13.18	45.07	26.12	15.03
	(0.00)	(0.00)	(0.34)	(0.53)	(0.79)	(7.18)	(8.17)	(11.29)	(4.37)
Three-year									
AAA	65.98	21.90	2.29	0.31	0.21	0.08	0.10	0.13	9.01
	(11.96)	(12.13)	(1.68)	(0.75)	(0.46)	(0.29)	(0.41)	(0.36)	(5.28)
AA	1.04	68.20	17.67	1.84	0.30	0.19	0.02	0.11	10.62
	(0.87)	(9.65)	(6.23)	(1.43)	(0.48)	(0.42)	(0.07)	(0.18)	(3.76)
A	0.05	3.46	72.29	10.62	0.98	0.34	0.07	0.20	11.98
	(0.09)	(2.16)	(8.08)	(3.15)	(1.00)	(0.56)	(0.13)	(0.26)	(3.61)
BBB	0.01	0.21	7.53	68.14	6.29	1.31	0.23	0.67	15.60
	(0.05)	(0.35)	(2.96)	(7.96)	(2.19)	(1.21)	(0.32)	(0.86)	(3.18)
BB	0.01	0.04	0.39	10.09	50.52	10.75	1.10	3.18	23.93
	(0.05)	(0.11)	(0.62)	(3.43)	(8.03)	(2.85)	(0.82)	(3.19)	(3.46)
B	0.00	0.02	0.14	0.59	8.79	43.11	5.39	10.60	31.37
	(0.04)	(0.09)	(0.38)	(0.69)	(3.46)	(5.02)	(1.96)	(6.57)	(4.50)
CCC/C	0.00	0.00	0.08	0.40	1.34	16.44	10.83	41.07	29.85
	(0.00)	(0.00)	(0.41)	(1.00)	(1.40)	(6.46)	(5.54)	(11.86)	(7.31)
Five-year									
AAA	50.08	28.63	4.73	0.85	0.23	0.16	0.08	0.34	14.91
	(12.30)	(13.29)	(2.73)	(1.50)	(0.45)	(0.40)	(0.27)	(0.57)	(6.79)
AA	1.30	53.71	23.71	3.24	0.49	0.33	0.04	0.28	16.92
	(1.02)	(9.76)	(5.12)	(1.91)	(0.62)	(0.56)	(0.09)	(0.37)	(4.52)
A	0.06	4.44	59.85	13.84	1.61	0.54	0.11	0.41	19.13

Table 21

Global corporate average transition rates, 1981-2024 (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
	(0.09)	(2.43)	(9.41)	(2.82)	(1.24)	(0.80)	(0.17)	(0.44)	(4.39)
BBB	0.02	0.33	9.72	55.52	7.11	1.79	0.30	1.42	23.79
	(0.06)	(0.49)	(3.00)	(8.72)	(1.73)	(1.38)	(0.35)	(1.37)	(4.14)
BB	0.01	0.06	0.77	11.78	35.27	10.74	1.10	6.00	34.29
	(0.05)	(0.15)	(0.89)	(3.08)	(8.26)	(2.02)	(0.84)	(4.71)	(3.64)
B	0.01	0.02	0.17	1.12	8.90	26.29	3.53	16.37	43.60
	(0.08)	(0.07)	(0.46)	(1.12)	(3.03)	(4.47)	(1.22)	(7.48)	(5.71)
CCC/C	0.00	0.00	0.07	0.57	2.34	11.59	2.54	48.18	34.70
	(0.00)	(0.00)	(0.40)	(1.47)	(1.93)	(4.73)	(3.10)	(11.38)	(7.89)
Seven-year									
AAA	38.53	32.69	6.77	1.50	0.23	0.18	0.10	0.49	19.49
	(11.32)	(13.65)	(3.05)	(1.85)	(0.46)	(0.42)	(0.30)	(0.70)	(7.27)
AA	1.37	42.89	27.08	4.30	0.65	0.33	0.03	0.47	22.90
	(1.03)	(8.68)	(4.11)	(2.01)	(0.62)	(0.49)	(0.08)	(0.53)	(4.66)
A	0.06	4.83	50.61	15.56	2.05	0.64	0.11	0.71	25.43
	(0.11)	(1.99)	(9.01)	(2.21)	(1.35)	(0.84)	(0.16)	(0.60)	(4.30)
BBB	0.03	0.43	10.83	46.69	7.03	1.96	0.30	2.15	30.58
	(0.09)	(0.54)	(2.50)	(8.19)	(1.02)	(1.17)	(0.31)	(1.74)	(4.42)
BB	0.00	0.06	1.07	12.25	26.17	9.59	0.90	8.50	41.46
	(0.00)	(0.15)	(1.00)	(2.81)	(7.30)	(1.99)	(0.60)	(5.63)	(3.30)
B	0.00	0.01	0.23	1.55	8.07	17.42	2.02	20.23	50.46
	(0.06)	(0.07)	(0.50)	(1.34)	(2.19)	(3.90)	(0.68)	(7.57)	(5.91)
CCC/C	0.00	0.00	0.20	0.81	3.13	6.93	2.10	48.83	38.01
	(0.00)	(0.00)	(0.50)	(1.73)	(1.97)	(3.66)	(2.52)	(10.31)	(8.07)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 22

Average one-year corporate transition rates, 1981-2024 (%)

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
U.S.									
AAA	87.55	8.54	0.56	0.04	0.16	0.04	0.04	0.00	3.06
	(10.21)	(10.03)	(1.13)	(0.20)	(0.39)	(0.27)	(0.27)	(0.00)	(2.54)
AA	0.48	87.65	7.14	0.54	0.07	0.09	0.03	0.03	3.98
	(0.52)	(6.14)	(4.58)	(0.81)	(0.22)	(0.27)	(0.10)	(0.15)	(2.31)
A	0.04	1.54	88.90	5.09	0.32	0.13	0.02	0.06	3.89
	(0.12)	(1.22)	(4.39)	(2.50)	(0.48)	(0.29)	(0.10)	(0.15)	(1.87)

Table 22

Average one-year corporate transition rates, 1981–2024 (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
BBB	0.01	0.10	3.22	87.29	3.38	0.52	0.09	0.18	5.20
	(0.05)	(0.17)	(1.87)	(4.82)	(1.82)	(0.81)	(0.15)	(0.29)	(1.86)
BB	0.02	0.04	0.16	4.57	78.35	7.29	0.55	0.67	8.36
	(0.08)	(0.11)	(0.27)	(2.28)	(5.53)	(3.99)	(0.64)	(0.82)	(2.41)
B	0.00	0.02	0.08	0.16	4.16	75.84	4.96	3.16	11.61
	(0.00)	(0.09)	(0.21)	(0.23)	(1.95)	(4.13)	(2.74)	(3.08)	(2.49)
CCC/C	0.00	0.00	0.11	0.17	0.48	12.53	44.45	27.91	14.35
	(0.00)	(0.00)	(0.46)	(0.67)	(0.99)	(7.84)	(7.91)	(12.16)	(4.75)
Europe									
AAA	87.23	9.01	0.46	0.00	0.00	0.00	0.11	0.00	3.19
	(8.76)	(7.62)	(1.37)	(0.00)	(0.00)	(0.00)	(0.80)	(0.00)	(4.60)
AA	0.25	86.70	9.26	0.49	0.00	0.00	0.00	0.00	3.30
	(0.62)	(7.01)	(6.40)	(1.10)	(0.00)	(0.00)	(0.00)	(0.00)	(2.32)
A	0.01	1.65	88.88	4.78	0.13	0.03	0.00	0.03	4.50
	(0.04)	(1.68)	(5.08)	(3.43)	(0.31)	(0.38)	(0.00)	(0.08)	(1.93)
BBB	0.00	0.06	3.68	86.69	2.98	0.24	0.09	0.05	6.20
	(0.00)	(1.10)	(1.96)	(4.94)	(2.50)	(0.46)	(0.24)	(0.18)	(2.83)
BB	0.00	0.00	0.08	5.26	75.88	6.17	0.36	0.36	11.89
	(0.00)	(0.00)	(0.53)	(2.53)	(6.47)	(3.40)	(0.87)	(0.75)	(4.28)
B	0.00	0.00	0.02	0.17	4.60	74.62	4.91	1.75	13.93
	(0.00)	(0.00)	(0.17)	(0.42)	(2.89)	(6.07)	(2.97)	(2.72)	(4.68)
CCC/C	0.00	0.00	0.00	0.14	0.00	13.20	44.66	26.26	15.73
	(0.00)	(0.00)	(0.00)	(0.53)	(0.00)	(8.56)	(14.22)	(14.30)	(8.18)
Emerging and frontier markets									
AAA	86.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00
	(35.52)	(30.71)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(20.06)
AA	1.26	87.69	8.54	0.00	0.00	0.00	0.00	0.00	2.51
	(7.54)	(16.43)	(13.85)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(4.49)
A	0.00	0.87	92.18	3.92	0.20	0.17	0.00	0.03	2.62
	(0.00)	(1.40)	(5.41)	(4.00)	(0.68)	(0.47)	(0.00)	(0.14)	(2.83)
BBB	0.00	0.01	1.84	88.05	3.99	0.33	0.13	0.10	5.56
	(0.00)	(0.08)	(1.90)	(5.32)	(4.00)	(1.06)	(0.88)	(0.32)	(2.32)
BB	0.00	0.00	0.02	3.56	81.15	4.38	0.54	0.54	9.81
	(0.00)	(0.00)	(1.14)	(2.44)	(4.85)	(2.57)	(1.72)	(1.07)	(3.46)
B	0.00	0.00	0.00	0.12	5.96	72.12	4.01	2.98	14.80
	(0.00)	(0.00)	(0.00)	(0.28)	(3.86)	(5.11)	(3.55)	(3.17)	(3.70)

Table 22

Average one-year corporate transition rates, 1981-2024 (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
CCC/C	0.00	0.00	0.00	0.00	0.34	15.23	49.94	17.58	16.91
	(0.00)	(0.00)	(0.00)	(0.00)	(0.85)	(13.14)	(17.68)	(13.87)	(10.08)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 23

Average one-year transition rates for global corporate entities by rating level, 1981-2024 (%)

From/to	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC	D	NR
AAA	87.28	5.77	2.49	0.67	0.15	0.23	0.13	0.00	0.03	0.00	0.03	0.05	0.03	0.00	0.03	0.00	0.05	0.00	3.08
	(7.37)	(6.14)	(3.15)	(1.03)	(0.44)	(0.55)	(0.33)	(0.00)	(0.13)	(0.00)	(0.17)	(0.18)	(0.13)	(0.00)	(0.17)	(0.00)	(0.34)	(0.00)	(2.45)
AA+	2.03	80.94	9.84	3.14	0.62	0.33	0.17	0.04	0.08	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.77
	(3.52)	(12.11)	(7.38)	(3.92)	(2.16)	(0.86)	(0.44)	(0.22)	(0.61)	(0.21)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(2.93)
AA	0.40	1.37	81.33	8.32	2.54	1.10	0.34	0.37	0.12	0.08	0.05	0.03	0.02	0.02	0.00	0.02	0.05	0.02	3.87
	(0.50)	(1.64)	(9.07)	(6.36)	(2.55)	(1.20)	(0.57)	(0.79)	(0.34)	(0.23)	(0.15)	(0.12)	(0.10)	(0.11)	(0.00)	(0.09)	(0.15)	(0.08)	(2.42)
AA-	0.04	0.09	3.52	79.80	9.45	2.07	0.55	0.23	0.14	0.06	0.02	0.00	0.00	0.02	0.07	0.00	0.00	0.02	3.91
	(0.12)	(0.28)	(4.16)	(7.56)	(4.78)	(2.48)	(0.83)	(0.46)	(0.40)	(0.23)	(0.18)	(0.00)	(0.00)	(0.14)	(0.35)	(0.00)	(0.00)	(0.09)	(1.92)
A+	0.00	0.08	0.37	4.03	80.56	7.92	1.90	0.53	0.28	0.07	0.05	0.07	0.01	0.06	0.02	0.00	0.00	0.04	4.00
	(0.00)	(0.25)	(0.66)	(2.58)	(7.39)	(3.62)	(1.51)	(0.62)	(0.41)	(0.17)	(0.15)	(0.23)	(0.05)	(0.17)	(0.12)	(0.00)	(0.00)	(0.13)	(1.92)
A	0.03	0.04	0.18	0.36	5.14	80.21	6.35	2.17	0.75	0.23	0.08	0.09	0.05	0.07	0.02	0.00	0.01	0.05	4.17
	(0.12)	(0.12)	(0.46)	(0.48)	(2.07)	(5.92)	(2.97)	(1.69)	(0.89)	(0.35)	(0.18)	(0.25)	(0.26)	(0.26)	(0.09)	(0.00)	(0.05)	(0.11)	(2.08)
A-	0.04	0.01	0.05	0.12	0.37	6.14	79.82	6.85	1.67	0.49	0.11	0.11	0.09	0.09	0.02	0.01	0.02	0.05	3.94
	(0.17)	(0.04)	(0.13)	(0.25)	(0.57)	(3.02)	(6.58)	(3.04)	(1.52)	(0.59)	(0.29)	(0.31)	(0.21)	(0.26)	(0.07)	(0.07)	(0.13)	(0.16)	(1.79)
BBB+	0.00	0.01	0.04	0.05	0.18	0.64	6.54	77.94	7.49	1.36	0.30	0.24	0.10	0.14	0.08	0.02	0.05	0.09	4.74
	(0.00)	(0.04)	(0.14)	(0.16)	(0.38)	(0.91)	(2.90)	(7.24)	(3.60)	(1.34)	(0.48)	(0.51)	(0.20)	(0.42)	(0.26)	(0.08)	(0.15)	(0.23)	(1.98)
BBB	0.01	0.01	0.03	0.02	0.08	0.26	0.88	7.16	77.67	5.83	1.15	0.57	0.23	0.19	0.10	0.04	0.05	0.13	5.61
	(0.06)	(0.06)	(0.12)	(0.11)	(0.19)	(0.61)	(0.89)	(3.17)	(5.67)	(2.35)	(1.04)	(0.66)	(0.42)	(0.40)	(0.34)	(0.11)	(0.11)	(0.25)	(1.89)
BBB-	0.01	0.01	0.01	0.04	0.05	0.11	0.24	0.98	8.89	73.77	5.26	1.87	0.74	0.34	0.19	0.14	0.19	0.21	6.97
	(0.06)	(0.04)	(0.05)	(0.18)	(0.15)	(0.33)	(0.49)	(1.13)	(3.04)	(5.44)	(2.68)	(1.41)	(0.72)	(0.67)	(0.43)	(0.39)	(0.49)	(0.36)	(2.20)
BB+	0.03	0.00	0.00	0.02	0.02	0.07	0.07	0.35	1.42	10.59	67.53	7.22	2.31	0.94	0.45	0.19	0.29	0.27	8.23
	(0.19)	(0.00)	(0.00)	(0.11)	(0.09)	(0.33)	(0.24)	(0.62)	(1.73)	(4.27)	(7.61)	(4.24)	(1.88)	(1.48)	(1.00)	(0.34)	(0.81)	(0.54)	(2.56)
BB	0.00	0.00	0.03	0.01	0.00	0.05	0.07	0.13	0.55	1.77	9.82	65.93	8.28	2.23	0.93	0.34	0.47	0.44	8.95
	(0.00)	(0.00)	(0.18)	(0.06)	(0.00)	(0.32)	(0.21)	(0.37)	(0.94)	(1.97)	(3.96)	(5.27)	(3.62)	(1.51)	(1.18)	(0.56)	(0.86)	(0.63)	(2.87)
BB-	0.00	0.00	0.00	0.01	0.01	0.01	0.05	0.08	0.19	0.29	1.54	9.99	64.42	8.15	2.83	0.75	0.68	0.87	10.15
	(0.00)	(0.00)	(0.00)	(0.08)	(0.07)	(0.07)	(0.26)	(0.22)	(0.39)	(0.57)	(1.52)	(4.44)	(5.40)	(3.85)	(1.54)	(0.72)	(0.79)	(1.30)	(2.52)
B+	0.00	0.01	0.00	0.03	0.00	0.03	0.05	0.04	0.06	0.11	0.26	1.39	8.62	62.68	9.30	2.51	1.70	1.83	11.39
	(0.00)	(0.05)	(0.00)	(0.13)	(0.00)	(0.08)	(0.18)	(0.12)	(0.15)	(0.20)	(0.30)	(1.05)	(3.65)	(5.61)	(4.00)	(1.40)	(1.57)	(1.91)	(2.65)
B	0.00	0.00	0.01	0.01	0.00	0.02	0.03	0.02	0.04	0.03	0.08	0.22	1.07	7.37	62.22	9.87	3.78	2.69	12.54

Table 23

Average one-year transition rates for global corporate entities by rating level, 1981-2024 (%) (cont.)

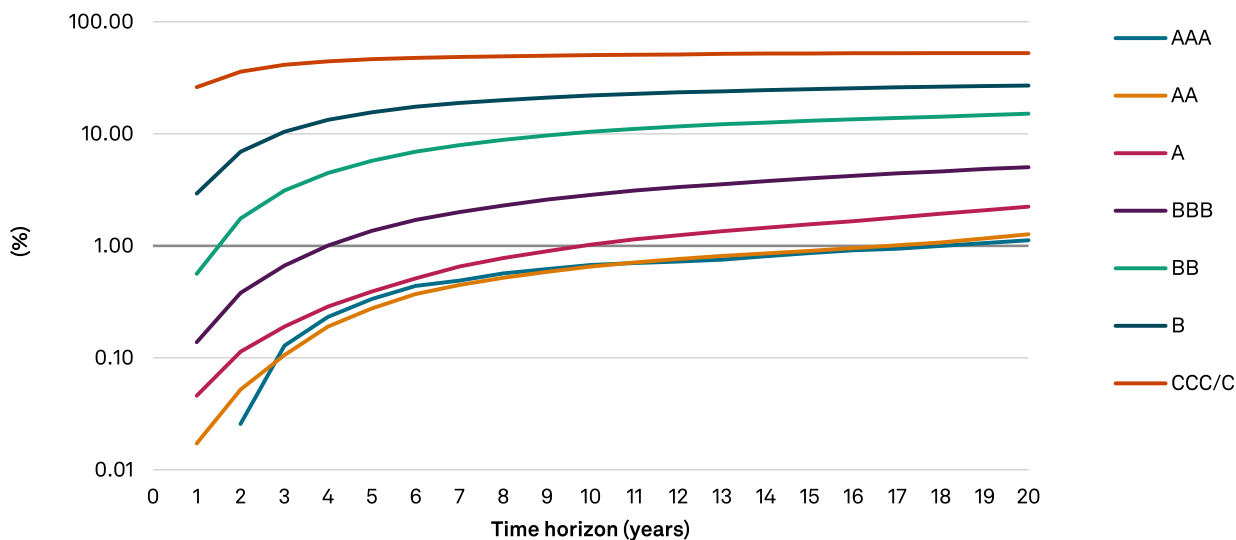
From/to	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC	D	NR
	(0.00)	(0.00)	(0.07)	(0.05)	(0.00)	(0.16)	(0.30)	(0.07)	(0.24)	(0.09)	(0.25)	(0.48)	(1.05)	(2.97)	(6.51)	(4.60)	(2.87)	(3.64)	(2.62)
B-	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.04	0.04	0.06	0.05	0.12	0.32	1.75	9.51	57.42	11.64	5.16	13.85
	(0.00)	(0.00)	(0.00)	(0.00)	(0.24)	(0.22)	(0.00)	(0.25)	(0.14)	(0.34)	(0.34)	(0.66)	(0.71)	(1.99)	(4.44)	(7.29)	(5.51)	(5.26)	(3.77)
CCC/C	0.00	0.00	0.00	0.00	0.02	0.00	0.05	0.04	0.05	0.04	0.02	0.11	0.27	0.71	2.34	10.12	45.07	26.12	15.03
	(0.00)	(0.00)	(0.00)	(0.00)	(0.18)	(0.00)	(0.30)	(0.37)	(0.26)	(0.30)	(0.19)	(0.42)	(0.64)	(1.29)	(2.50)	(5.50)	(8.17)	(11.29)	(4.37)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Chart 25

Global corporate average cumulative default rates by rating, 1981-2024

Logarithmic scale



The data in this chart is identical to the data in chart 4, converted to log scale. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

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Table 24

Global corporate average cumulative default rates, 1981-2024

(%)	--Time horizon--														
	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
AAA	0.00	0.03	0.13	0.23	0.34	0.44	0.49	0.57	0.62	0.67	0.70	0.73	0.75	0.81	0.86
AA	0.02	0.05	0.11	0.19	0.28	0.37	0.45	0.52	0.59	0.65	0.71	0.76	0.81	0.86	0.90
A	0.05	0.11	0.19	0.29	0.39	0.51	0.65	0.78	0.90	1.03	1.14	1.25	1.35	1.45	1.56

Table 24

Global corporate average cumulative default rates, 1981-2024 (cont.)

(%)	--Time horizon--														
	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
BBB	0.14	0.38	0.67	1.01	1.36	1.71	2.00	2.30	2.58	2.86	3.13	3.35	3.56	3.78	4.01
BB	0.56	1.76	3.12	4.48	5.75	6.93	7.94	8.86	9.68	10.44	11.06	11.65	12.17	12.60	13.05
B	2.93	6.93	10.46	13.31	15.60	17.45	18.90	20.06	21.08	22.02	22.82	23.43	24.02	24.57	25.11
CCC/C	26.12	35.92	41.32	44.35	46.53	47.57	48.61	49.29	49.89	50.43	50.85	51.32	51.86	52.26	52.30
Investment grade	0.08	0.21	0.37	0.57	0.77	0.98	1.17	1.34	1.52	1.69	1.85	1.98	2.11	2.24	2.38
Speculative grade	3.54	6.78	9.55	11.79	13.64	15.15	16.39	17.41	18.32	19.15	19.85	20.44	20.99	21.47	21.93
All rated	1.50	2.91	4.13	5.15	6.00	6.72	7.31	7.81	8.26	8.67	9.02	9.31	9.58	9.83	10.07

Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 25

Average cumulative default rates for corporate entities by region, 1981-2024

(%)	--Time horizon--														
	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
U.S.															
AAA	0.00	0.04	0.16	0.28	0.40	0.53	0.57	0.65	0.73	0.81	0.85	0.89	0.93	1.01	1.10
AA	0.03	0.07	0.16	0.28	0.39	0.53	0.65	0.76	0.86	0.96	1.05	1.12	1.19	1.26	1.34
A	0.06	0.17	0.30	0.45	0.61	0.79	0.99	1.18	1.37	1.57	1.75	1.92	2.09	2.23	2.39
BBB	0.18	0.48	0.83	1.26	1.73	2.19	2.61	3.01	3.42	3.80	4.18	4.46	4.73	5.04	5.34
BB	0.67	2.11	3.82	5.49	7.01	8.46	9.71	10.88	11.92	12.90	13.71	14.49	15.17	15.71	16.26
B	3.16	7.52	11.43	14.56	17.08	19.14	20.74	22.03	23.16	24.20	25.07	25.76	26.42	27.04	27.63
CCC/C	27.91	38.94	44.92	48.51	51.07	52.27	53.57	54.32	55.07	55.70	56.31	56.79	57.29	57.70	57.70
Investment grade	0.11	0.28	0.49	0.75	1.02	1.31	1.57	1.83	2.08	2.33	2.57	2.75	2.94	3.12	3.31
Speculative grade	3.99	7.74	10.98	13.59	15.72	17.49	18.93	20.13	21.20	22.18	23.01	23.71	24.36	24.93	25.46
All rated	1.85	3.61	5.16	6.44	7.52	8.43	9.19	9.84	10.42	10.96	11.43	11.81	12.17	12.50	12.81
Europe															
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
AA	0.00	0.02	0.05	0.09	0.14	0.19	0.22	0.24	0.27	0.27					
A	0.03	0.06	0.08	0.13	0.19	0.24	0.31	0.34	0.35	0.36					
BBB	0.05	0.14	0.28	0.41	0.56	0.76	0.93	1.09	1.27	1.43					
BB	0.36	1.15	1.90	2.61	3.47	4.29	4.94	5.35	5.72	6.13					
B	1.75	4.72	7.47	9.82	11.88	13.46	14.67	15.53	16.28	16.81					
CCC/C	26.26	36.23	41.57	45.22	47.27	47.82	48.12	48.45	48.45	48.93					

Table 25

Average cumulative default rates for corporate entities by region, 1981-2024 (cont.)

(%)	--Time horizon--														
	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
Investment grade	0.03	0.08	0.14	0.21	0.30	0.39	0.48	0.55	0.61	0.66					
Speculative grade	2.91	5.52	7.67	9.44	10.99	12.19	13.10	13.73	14.26	14.73					
All rated	0.88	1.67	2.31	2.84	3.30	3.67	3.96	4.15	4.32	4.45					
Emerging and frontier markets															
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
A	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03					
BBB	0.10	0.41	0.76	1.17	1.55	1.78	1.91	2.02	2.09	2.11					
BB	0.54	1.51	2.55	3.55	4.42	5.09	5.67	6.18	6.64	7.00					
B	2.98	6.09	8.46	10.45	11.96	13.11	14.14	15.01	15.75	16.52					
CCC/C	17.58	22.81	25.84	26.52	27.69	28.60	29.37	30.17	30.68	31.04					
Investment grade	0.08	0.28	0.52	0.80	1.05	1.21	1.30	1.37	1.42	1.44					
Speculative grade	2.53	4.61	6.29	7.67	8.81	9.69	10.46	11.14	11.71	12.24					
All rated	1.44	2.69	3.73	4.63	5.39	5.96	6.44	6.86	7.22	7.54					

Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 26

Global corporate average cumulative default rates by rating level, 1981-2024

(%)	--Time horizon--														
	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
AAA	0.00	0.03	0.13	0.23	0.34	0.44	0.49	0.57	0.62	0.67	0.70	0.73	0.75	0.81	0.86
AA+	0.00	0.04	0.04	0.09	0.13	0.18	0.23	0.27	0.32	0.37	0.43	0.48	0.53	0.59	0.65
AA	0.02	0.03	0.08	0.20	0.33	0.44	0.56	0.66	0.74	0.83	0.90	0.95	1.04	1.09	1.14
AA-	0.02	0.07	0.15	0.21	0.27	0.36	0.42	0.47	0.53	0.59	0.64	0.68	0.70	0.73	0.77
A+	0.04	0.07	0.16	0.27	0.35	0.43	0.52	0.61	0.72	0.83	0.93	1.04	1.16	1.30	1.42
A	0.05	0.12	0.19	0.28	0.39	0.53	0.68	0.81	0.96	1.13	1.27	1.37	1.47	1.53	1.66
A-	0.05	0.14	0.22	0.30	0.42	0.55	0.73	0.87	0.97	1.07	1.16	1.27	1.37	1.47	1.55
BBB+	0.09	0.23	0.41	0.59	0.79	1.01	1.18	1.37	1.60	1.83	2.04	2.19	2.36	2.55	2.75
BBB	0.13	0.33	0.51	0.80	1.09	1.38	1.68	1.95	2.24	2.50	2.77	2.99	3.20	3.32	3.51
BBB-	0.21	0.63	1.17	1.76	2.40	2.93	3.39	3.83	4.17	4.50	4.84	5.15	5.42	5.81	6.13
BB+	0.27	0.83	1.50	2.21	2.90	3.58	4.16	4.55	5.00	5.51	5.87	6.29	6.69	7.01	7.45
BB	0.44	1.38	2.67	3.84	5.05	6.06	6.96	7.78	8.59	9.33	10.08	10.66	11.12	11.42	11.74
BB-	0.87	2.71	4.62	6.57	8.28	9.92	11.31	12.67	13.75	14.67	15.36	16.07	16.71	17.29	17.85

Table 26

Global corporate average cumulative default rates by rating level, 1981-2024 (cont.)

(%)	--Time horizon--														
	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
B+	1.83	4.97	8.05	10.72	12.88	14.57	16.11	17.41	18.57	19.62	20.52	21.14	21.83	22.50	23.14
B	2.69	6.36	9.68	12.44	14.69	16.70	18.10	19.16	20.13	21.04	21.64	22.25	22.72	23.09	23.52
B-	5.16	11.20	15.94	19.35	22.03	23.91	25.28	26.36	27.19	27.90	28.87	29.50	30.02	30.55	30.99
CCC/C	26.12	35.92	41.32	44.35	46.53	47.57	48.61	49.29	49.89	50.43	50.85	51.32	51.86	52.26	52.30
Investment grade	0.08	0.21	0.37	0.57	0.77	0.98	1.17	1.34	1.52	1.69	1.85	1.98	2.11	2.24	2.38
Speculative grade	3.54	6.78	9.55	11.79	13.64	15.15	16.39	17.41	18.32	19.15	19.85	20.44	20.99	21.47	21.93
All rated	1.50	2.91	4.13	5.15	6.00	6.72	7.31	7.81	8.26	8.67	9.02	9.31	9.58	9.83	10.07

Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Gini Ratios And Lorenz Curves

A quantitative analysis of the performance of S&P Global Ratings' corporate ratings shows that they continue to correlate with default risk across several time horizons. As one measure of ratings performance, the cumulative share of defaulters was plotted against the cumulative share of issuers by rating in a Lorenz curve to visually render the accuracy of its rank ordering (for definitions and methodology, refer to Appendix II).

Over the long term, the global weighted average Gini coefficient was 82.9% over the one-year horizon, 75.1% over three years, 71.7% over five years, and 69.2% over seven years (see table 27). If the rank ordering of ratings had little predictive value, the cumulative share of defaulting corporate entities and the cumulative share of all entities at each rating would be nearly the same, producing a Gini ratio of zero.

In line with expectations, the Gini coefficients decline over time because longer time horizons allow for greater credit deterioration among higher-rated entities. For example, in the one-year global Lorenz curve, 96.9% of defaults occurred in the speculative-grade categories, which constituted just 41.2% of all corporate ratings (see charts 26-29).

One-year Gini coefficients appear to be broadly cyclical and negatively correlated with default rates (see chart 30). In an economic downturn, the risk that higher-rated issuers will experience rapid credit deterioration rises; in periods with high default rates, there tends to be greater variation in the distribution of issuer ratings prior to default--and this reduces the Gini ratio.

Table 27

Corporate Gini coefficients by region, 1981-2024

	--Time horizon--			
	One-year	Three-year	Five-year	Seven-year
Global				
Weighted average	82.86	75.11	71.72	69.22
Average	85.65	78.73	74.66	71.68
Standard deviation	(5.33)	(4.94)	(5.19)	(5.16)
U.S.				
Weighted average	80.72	72.25	68.83	66.25
Average	84.56	76.51	72.20	69.02
Standard deviation	(6.61)	(6.36)	(6.37)	(5.95)
Europe*				
Weighted average	90.23	84.79	82.52	79.93
Average	91.38	86.98	82.33	77.23
Standard deviation	(4.84)	(5.23)	(5.88)	(9.95)

Note: Numbers in parentheses are standard deviations. *Average and standard deviation for Europe are calculated for 1996-2023 because of sample size considerations. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 28

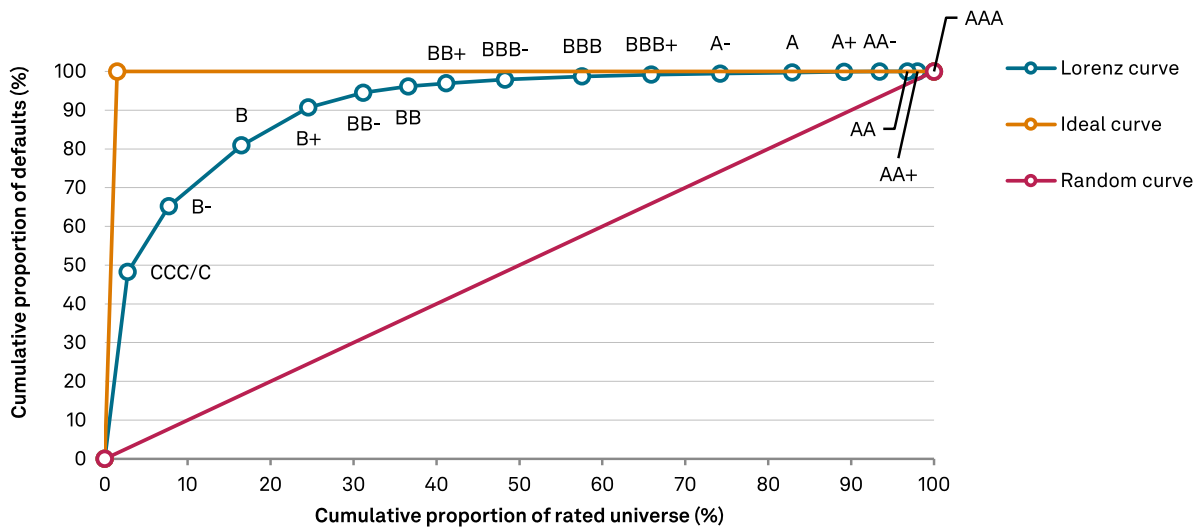
Gini coefficients for global corporate entities by broad sector, 1981-2024

	--Time horizon--			
	One-year	Three-year	Five-year	Seven-year
Financial				
Weighted average	80.37	70.41	63.89	59.74
Average	83.63	76.97	70.20	65.00
Standard deviation	(19.61)	(14.63)	(16.79)	(17.39)
Nonfinancial				
Weighted average	80.74	71.88	68.45	65.98
Average	84.48	76.55	72.45	69.51
Standard deviation	(5.83)	(5.10)	(5.20)	(4.89)

Note: Numbers in parentheses are standard deviations. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Chart 26

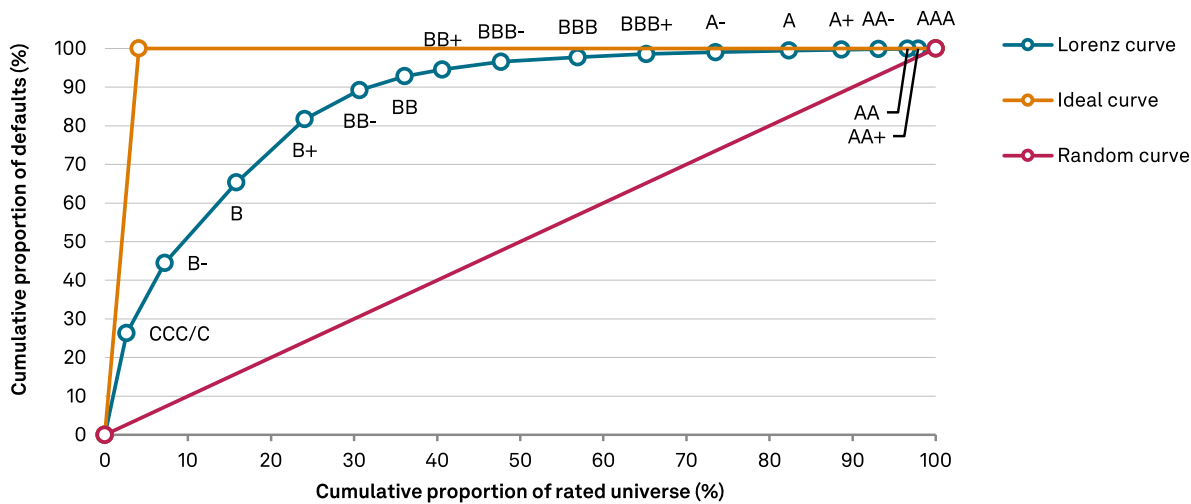
Global one-year relative corporate ratings performance, 1981-2024



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Chart 27

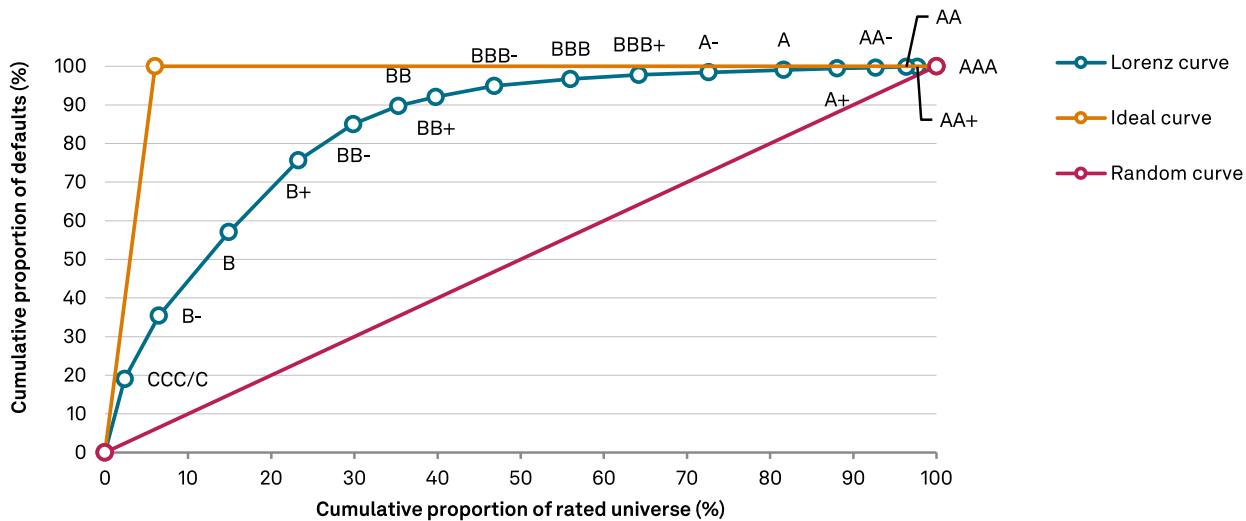
Global three-year relative corporate ratings performance, 1981-2024



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Chart 28

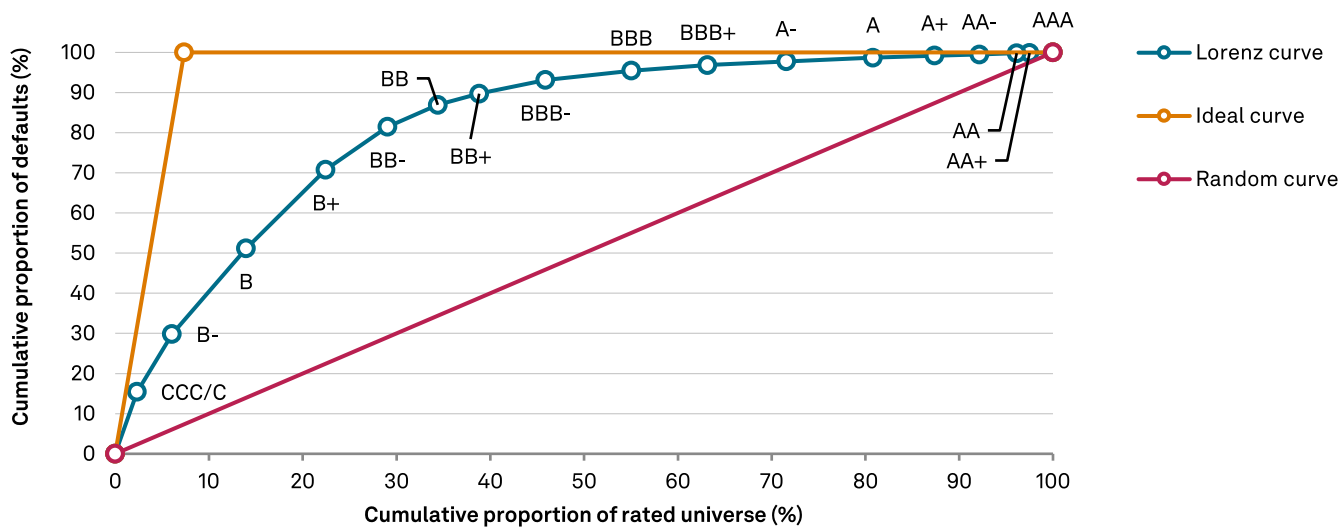
Global five-year relative corporate ratings performance, 1981-2024



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Chart 29

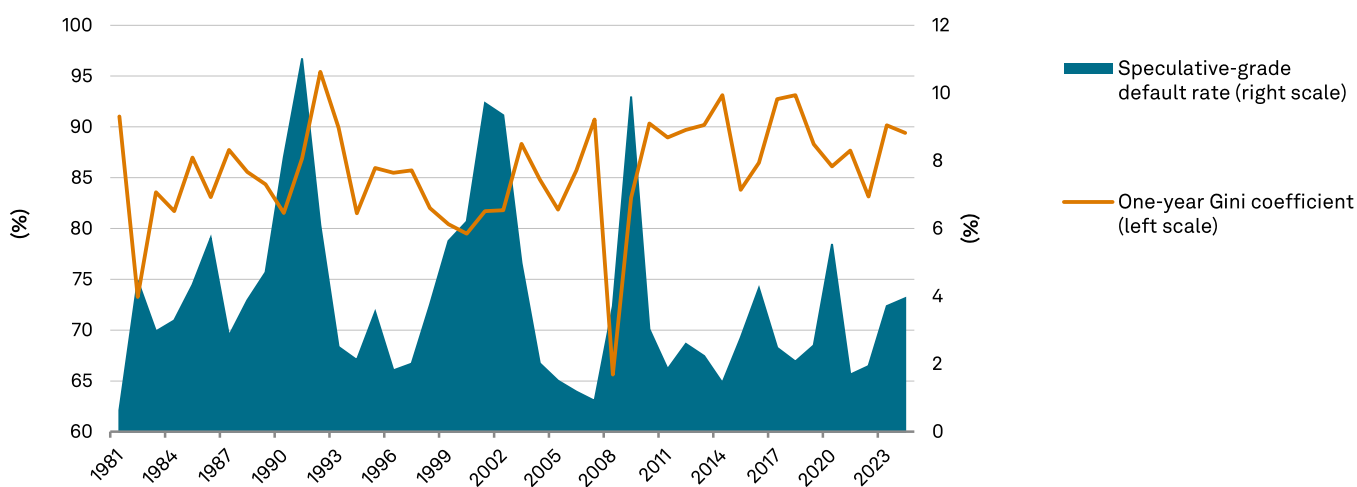
Global seven-year relative corporate ratings performance, 1981-2024



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Chart 30

Global one-year Gini coefficients versus speculative-grade default rate



Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.
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Appendix I: Methodology And Definitions

This long-term corporate default and rating transition study uses the **CreditPro** database of long-term local currency issuer credit ratings. The analysis excludes public information ("pi") ratings and ratings based on the guarantee of another company or government entity. We also do not include short-term issuer credit ratings.

S&P Global Ratings does not require all issuers with rated debt to have an issuer credit rating. Therefore, if an issuer has rated debt but not an issuer credit rating, we assign a proxy rating so that the **CreditPro** corporate dataset accurately represents the complete universe of ratings. The local currency senior unsecured rating is the preferred debt rating used for the proxy because it is usually consistent with the issuer credit rating. In a small number of cases, we use the subordinated debt rating or the senior secured rating as the proxy.

An S&P Global Ratings issuer credit rating is a forward-looking opinion about an obligor's overall creditworthiness. This opinion focuses on the obligor's capacity and willingness to meet its financial commitments as they come due. It does not apply to any specific financial obligation because it does not take into account the nature and provisions of any single obligation, its standing in bankruptcy or liquidation, statutory preferences, or the legality and enforceability of the obligation. Counterparty credit ratings, corporate credit ratings, and sovereign credit ratings are all forms of issuer credit ratings. Issuer credit ratings can be either long-term or short-term.

Our ongoing enhancement of the database used to generate this study could lead to outcomes that differ to some degree from those reported in previous studies. However, this poses no continuity problem because each study reports statistics back to Dec. 31, 1980. Therefore, each annual default study is self-contained and effectively supersedes all previous versions.

Issuers included in this study

This study analyzes the rating histories of 23,831 issuers that S&P Global Ratings rated as of Dec. 31, 1980, or that were first rated between that date and Dec. 31, 2024. These include industrials, utilities, financial institutions, and insurance companies around the world with long-term local currency ratings. Structured finance vehicles, public-sector issuers, and sovereign issuers are the subjects of separate default and transition studies, and we exclude them from this study.

In this study, the insurance industry includes life insurance, health insurance, property/casualty insurance, reinsurance, bond insurance, mortgage insurance, and title insurance. In addition to these subsectors, this study groups insurance service providers (such as insurance brokers and third-party administrators that are rated according to corporate criteria) with the insurance industry.

To avoid overcounting, we exclude subsidiaries with debt that is fully guaranteed by a parent or with default risk that is considered identical to that of a parent. The latter are companies with obligations that are not legally guaranteed by a parent but that have operating or financing activities that are so inextricably entwined with those of the parent that it would be impossible to imagine the default of one and not the other. At times, however, some of these subsidiaries might not yet have been covered by a parent's guarantee, or the relationship that combines the default risk of parent and subsidiary might have come to an end or might not have begun. We included such subsidiaries for the period during which they had a distinct and separate risk of default.

Issuers with withdrawn ratings

S&P Global Ratings withdraws ratings when an entity's entire debt is paid off or when the program or programs rated are terminated and the relevant debt extinguished. Others are withdrawn because of a lack of cooperation, particularly when a company is experiencing financial difficulties and refuses to provide all the information needed to continue surveillance on the ratings, or at the entity's request. For the purposes of this study, a corporate rating may also be withdrawn as a result of mergers and acquisitions.

Definition of default

An obligor rated 'SD' (selective default) or 'D' (default) is in default on one or more of its financial obligations, including rated and unrated financial obligations but excluding hybrid instruments classified as regulatory capital or in nonpayment according to terms. An obligor is considered in default unless S&P Global Ratings believes that such payments will be made within five business days of the due date in the absence of a stated grace period, or within the earlier of the stated grace period or 30 calendar days.

A 'D' rating is assigned when S&P Global Ratings believes that the default will be a general default and that the obligor will fail to pay all or substantially all of its obligations as they come due. An 'SD' rating is assigned when S&P Global Ratings believes that the obligor has selectively defaulted on a specific issue or class of obligations but will continue to meet its payment obligations on other issues or classes of obligations in a timely manner. S&P Global Ratings lowers its rating on an obligor to 'D' or 'SD' if the obligor is conducting a distressed exchange offer.

'R' (regulatory intervention) indicates that an obligor is under regulatory supervision owing to its financial condition. This does not necessarily indicate a default event, but during the period of regulatory supervision, the regulators may have the power to favor one class of obligations over others or pay some obligations and not others. Preferred stock is not considered a financial obligation; thus, a missed preferred stock dividend is not normally equated with default. On July 5, 2020, we removed the 'R' symbol from all rating scales.

We deem 'D', 'SD', and 'R' issuer ratings to be defaults for the purposes of this study. A default is assumed to take place on the earliest of:

- The date S&P Global Ratings revised the rating(s) to 'D', 'SD', or 'R';
- The date a debt payment was missed;
- The date a distressed exchange offer was announced; or
- The date the debtor filed for, or was forced into, bankruptcy.

When an issuer defaults, it is not uncommon for S&P Global Ratings to subsequently withdraw the 'D' rating. For the purposes of this study, if an issuer defaults, we end its rating history at 'D'. If any defaulting entity reemerges from bankruptcy--or otherwise restructures its defaulted debt instruments, thereby reestablishing regular, timely payment of all its debts--we reenter this issuer into the database as a new entity. Its rating history after the default event is included in all calculations as entirely separate from its experience leading up to its earlier default.

Many practitioners use statistics from this default study to estimate the "probability of default" and "probability of rating transition." It is important to note that S&P Global Ratings' credit ratings do not imply a specific probability of default.

Regional definitions

Within this study, tables and charts are often presented using specific geographic regions. Like most of our studies, issuer ratings included in this study are classified by the geographic location in which each entity is incorporated. Some locations can be included in multiple regions, and S&P Global Ratings does not have corporate ratings within every location. The regions covered in this study are:

U.S. and tax havens: U.S., Bermuda, and Cayman Islands

Other developed: Australia, Brunei Darussalam, Canada, Israel, Japan, Republic of Korea, New Zealand, and Singapore

Europe: Austria, Belgium, British Virgin Islands, Bulgaria, Channel Islands, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Gibraltar, Greece, Guernsey, Hungary, Iceland, Ireland, Isle of Man, Italy, Jersey, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the U.K.

Emerging markets in this study consist of the following subregions:

Asia-Pacific: Bangladesh, Bhutan, China, Fiji, Hong Kong, India, Indonesia, Macao Special Administrative Region of China, Malaysia, Mongolia, Pakistan, Papua New Guinea, Philippines, Serbia, Sri Lanka, Taiwan, Thailand, British Indian Ocean Territory, and Vietnam

EMEA: Angola, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Bulgaria, Cote d'Ivoire, Croatia, Cyprus, Egypt, Estonia, Gabon, Georgia, Ghana, Hungary, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Lithuania, Mauritius, Montenegro, Morocco, Namibia, Nigeria, Oman, Poland, Qatar, Moldova, Romania, Russia, Saudi Arabia, Slovakia, South Africa, Tunisia, Turkiye, Ukraine, United Arab Emirates, and Uzbekistan

Latin America and Caribbean: Argentina, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, Trinidad and Tobago, and Uruguay

Frontier markets in this study consist of the following subregions:

Asia-Pacific: Cambodia and Marshall Islands

EMEA: Iraq, Liberia, Syria, and Togo

Latin America and Caribbean: Aruba, Bahamas, Curacao, Netherlands Antilles*, Turks and Caicos Islands, and Venezuela

*The Netherlands Antilles was dissolved in 2010.

Calculations

Static pool methodology. S&P Global Ratings Credit Research & Insights conducts its default studies on the basis of groupings called static pools. For the purposes of this study, we form static pools by grouping issuers (for example, by rating category) at the beginning of each year, quarter, or month that the database covers. Each static pool is followed from that point forward. All

companies included in the study are assigned to one or more static pools. When an issuer defaults, we assign that default to all of the static pools to which the issuer belonged.

We use the static pool methodology to avoid certain pitfalls in estimating default rates, such as by ensuring that default rates account for rating migration and allowing for default rates to be calculated across multiperiod time horizons. Some methods for calculating default and rating transition rates might charge defaults against only the initial rating on the issuer, ignoring more recent rating changes that supply more current information. Other methods may calculate default rates using only the most recent year's default and rating data, which may yield comparatively low default rates during periods of high rating activity because they ignore prior years' default activity.

The pools are static in the sense that their membership remains constant over time. Each static pool can be interpreted as a buy-and-hold portfolio. Because errors, if any, are corrected by every new update and because the criteria for inclusion or exclusion of companies in the default study are subject to minor revisions as time goes by, it is not possible to compare static pools across different studies. Therefore, every update revises results back to the same starting date of Dec. 31, 1980, so as to avoid continuity problems.

Entities that have had ratings withdrawn--that is, revised to not rated (NR)--are surveilled with the aim of capturing a potential default. Because static pools include only entities with active ratings as of the beginning date of a given pool, we exclude companies with withdrawn ratings, as well as those that have defaulted, from subsequent static pools. If the rating on an entity is withdrawn after the start date of a particular static pool and the entity subsequently defaults, we will include the entity in that static pool as a defaulter and categorize it in the rating category of which it was a member at that time.

For instance, the 1981 static pool consists of all companies rated as of 12:00:01 a.m. on Jan. 1, 1981. Adding those companies first rated in 1981 to the surviving members (those still actively rated and not in default) of the 1981 static pool forms the 1982 static pool. All rating changes that took place are reflected in the newly formed 1982 static pool through the ratings on these entities as of 12:00:01 a.m. on Jan. 1, 1982. We used the same method to form static pools for 1983-2024. From Jan. 1, 1981-Dec. 31, 2024, a total of 23,831 first-time-rated organizations were added to form new static pools, while we excluded 3,556 defaulting companies and 13,432 companies that are no longer rated (NR).

Consider the following example: An issuer is originally rated 'BB' in mid-1986 and is downgraded to 'B' in 1988. This is followed by a rating withdrawal in 1990 and a default in 1993. We would include this hypothetical company in the 1987 and 1988 pools with the 'BB' rating, which was the rating on the issuer at the beginning of those years. Likewise, it would be included in the 1989 and 1990 pools with the 'B' rating. It would not be part of the 1986 pool because it was not rated as of the first day of that year, and it would not be included in any pool after the last day of 1990 because the rating had been withdrawn by then. Yet each of the four pools in which this company was included (1987-1990) would record its 1993 default at the appropriate time horizon.

Default rate calculation. We calculated annual default rates for each static pool, first in units and later as percentages with respect to the number of issuers in each rating category. We combined these percentages to obtain cumulative default rates for the 44 years the study covers (see tables 24-26 and 30-32).

Issuer-weighted default rates. All default rates that appear in this study are based on the number of issuers rather than the dollar amounts affected by defaults or rating changes. Although dollar amounts provide information about the portion of the market that is affected by defaults or rating changes, issuer-weighted averages are more useful measures of the performance of

ratings.

Average cumulative default rate calculation. The cumulative default rates in this study average the experience of all static pools by first calculating marginal default rates for each possible time horizon and for each static pool, weight-averaging the marginal default rates conditional on survival (survivors being nondefaulters) and accumulating the average conditional marginal default rates (see tables 24-26 and 30-32). We calculated conditional default rates by dividing the number of issuers in a static pool that default at a specific time horizon by the number of issuers that survived (did not default) to that point in time. Weights are based on the number of issuers in each static pool. Cumulative default rates are one minus the product of the proportion of survivors (nondefaulters).

For instance, in table 32, the weighted average first-year default rate for all speculative-grade-rated companies for all 44 pools was 3.5%, meaning that an average of 96.5% survived one year. Similarly, the second- and third-year conditional marginal averages--shown in the "Summary statistics" section at the bottom portion of the table--were 3.4% for the first 44 pools (96.6% of those companies that did not default in the first year survived the second year) and 3.0% for the first 43 pools (97.0% of those companies that did not default by the second year survived the third year), respectively. Multiplying 96.5% by 96.6% results in a 93.2% survival rate to the end of the second year, which leads to a two-year average cumulative default rate of 6.8%. Multiplying 93.2% by 97.0% results in a 90.4% survival rate to the end of the third year, which results in a three-year average cumulative default rate of 9.5%.

Transition analysis. Transition rates compare issuer credit ratings at the beginning of a period with ratings at the end of the period. To compute one-year rating transition rates by rating category, we compared the rating on each entity at the end of a particular year with the rating at the beginning of the same year. An issuer that remained rated for more than one year was counted as many times as the number of years it was rated.

For instance, an issuer continually rated from the middle of 1984 to the middle of 1991 would appear in the seven consecutive one-year transition matrices from 1985-1991. If the rating on the issuer was withdrawn in the middle of 1991, it would be included in the column representing transitions to NR in the 1991 transition matrix. Similarly, if it defaulted in the middle of 1991, it would be included in the column representing transitions to 'D' in the 1991 one-year transition matrix.

All 1981 static pool members still rated on Jan. 1, 2024, had 44 one-year transitions, while companies first rated on Jan. 1, 2024, had only one. Table 29 displays the summary of one-year transitions in the investment-grade and speculative-grade rating categories. Each one-year transition matrix displays all rating movements between letter categories from the beginning of the year through year-end. For each rating listed in the matrix's leftmost column, there are nine ratios listed in the rows, corresponding to the ratings from 'AAA' to 'D', plus an entry for NR (see table 22).

The only ratings considered in these calculations are those on entities at the beginning of each static pool and those at the end. All rating changes that occur in between are ignored. For example, if an entity was rated 'A' on Jan. 1, 2024, and was downgraded to 'BBB' in the middle of the year and then upgraded to 'A' later in the year (with no other subsequent rating changes), this entity would be included only in the percentage of issuers that began the year as 'A' that ended the year as 'A'. This also applies to transition matrices that span longer time horizons. If an issuer defaults or if the rating on the issuer is withdrawn in the middle of the year, then it would be considered rated 'D' or not rated as of Dec. 31 of that particular year.

Table 29

Summary of one-year global corporate rating transitions

	--Investment-grade rating distribution at year-end--					--Speculative-grade rating distribution at year-end--				
	Jan. 1 investment grade (no.)	Investment grade (%)	Speculative grade (%)*	Defaulted (%)§	Rating withdrawn (%)	Jan. 1 speculative grade (no.)	Investment grade (%)†	Speculative grade (%)	Defaulted (%)	Rating withdrawn (%)
1981	1,031	97.38	1.36	0.00	1.26	318	4.72	89.94	0.63	4.72
1982	1,062	93.31	3.20	0.19	3.30	336	2.68	80.36	4.46	12.50
1983	1,083	94.18	2.12	0.09	3.60	338	3.25	83.43	2.96	10.36
1984	1,147	95.38	2.27	0.17	2.18	365	4.66	87.40	3.29	4.66
1985	1,188	93.18	3.45	0.00	3.37	415	3.86	85.78	4.34	6.02
1986	1,327	90.28	3.77	0.15	5.80	524	3.24	82.06	5.73	8.97
1987	1,342	90.46	3.13	0.00	6.41	673	3.71	79.20	2.82	14.26
1988	1,355	91.96	2.73	0.00	5.31	748	3.61	79.55	3.88	12.97
1989	1,398	93.49	2.65	0.21	3.65	744	5.24	75.13	4.70	14.92
1990	1,450	94.76	2.07	0.14	3.03	691	3.18	75.25	8.10	13.46
1991	1,488	96.37	1.75	0.13	1.75	590	3.05	77.97	11.02	7.97
1992	1,629	96.56	1.23	0.00	2.21	525	6.29	78.67	6.10	8.95
1993	1,777	92.80	1.52	0.00	5.68	560	4.64	76.79	2.50	16.07
1994	1,854	95.85	0.76	0.05	3.34	709	4.23	85.90	2.12	7.76
1995	2,046	95.50	1.17	0.05	3.27	820	3.78	85.00	3.54	7.68
1996	2,242	94.47	0.62	0.00	4.91	885	4.75	81.02	1.81	12.43
1997	2,491	93.26	1.24	0.08	5.42	996	4.42	81.02	2.01	12.55
1998	2,777	90.46	2.20	0.14	7.20	1,308	3.06	83.56	3.75	9.63
1999	2,893	90.74	1.62	0.17	7.47	1,651	1.64	81.34	5.63	11.39
2000	2,960	91.72	1.79	0.24	6.25	1,756	2.16	83.37	6.21	8.26
2001	3,067	90.90	2.61	0.23	6.26	1,773	1.47	79.64	9.70	9.19
2002	3,181	89.59	3.90	0.41	6.10	1,701	1.76	79.95	9.35	8.94
2003	3,099	92.55	2.45	0.10	4.90	1,789	1.51	82.28	4.97	11.24
2004	3,165	94.15	1.01	0.03	4.80	1,880	2.18	84.63	2.02	11.17
2005	3,271	93.03	1.56	0.03	5.38	2,063	3.10	82.40	1.50	12.99
2006	3,298	93.88	1.39	0.00	4.73	2,197	2.18	82.16	1.18	14.47
2007	3,373	90.10	1.75	0.00	8.15	2,305	3.12	81.65	0.91	14.32
2008	3,352	92.42	1.94	0.42	5.22	2,400	2.13	83.38	3.71	10.79
2009	3,384	89.60	3.34	0.33	6.74	2,254	1.29	77.06	9.89	11.76
2010	3,219	94.87	0.93	0.00	4.19	2,119	2.27	84.99	3.02	9.72
2011	3,271	93.52	1.74	0.03	4.71	2,382	2.35	84.05	1.85	11.75
2012	3,287	93.73	1.73	0.00	4.53	2,549	1.92	85.64	2.59	9.85
2013	3,294	94.96	1.37	0.00	3.67	2,775	2.02	85.48	2.23	10.27
2014	3,383	95.54	1.21	0.00	3.25	3,128	1.44	85.61	1.44	11.51

Table 29

Summary of one-year global corporate rating transitions (cont.)

	--Investment-grade rating distribution at year-end--					--Speculative-grade rating distribution at year-end--				
	Jan. 1 investment grade (no.)	Investment grade (%)	Speculative grade (%)*	Defaulted (%)§	Rating withdrawn (%)	Jan. 1 speculative grade (no.)	Investment grade (%)†	Speculative grade (%)	Defaulted (%)	Rating withdrawn (%)
2015	3,524	92.96	2.58	0.00	4.46	3,391	1.39	83.78	2.77	12.06
2016	3,534	93.18	1.70	0.03	5.09	3,378	1.15	82.92	4.23	11.69
2017	3,522	94.09	1.48	0.00	4.43	3,356	1.43	82.15	2.47	13.95
2018	3,525	95.18	0.79	0.00	4.03	3,422	1.61	84.13	2.07	12.19
2019	3,589	95.10	0.67	0.06	4.18	3,606	1.03	84.91	2.55	11.51
2020	3,586	93.81	2.43	0.00	3.76	3,575	0.31	84.17	5.54	9.99
2021	3,512	95.53	0.88	0.00	3.59	3,562	1.38	83.41	1.68	13.53
2022	3,539	95.22	0.57	0.00	4.21	3,668	1.28	84.08	1.94	12.70
2023	3,533	96.04	0.79	0.06	3.11	3,453	1.48	85.90	3.71	8.92
2024	3,539	96.50	0.76	0.03	2.71	3,276	1.37	85.16	3.94	9.52
Weighted average		93.55	1.71	0.08	4.66		1.97	83.18	3.54	11.30
Median		93.77	1.72	0.03	4.44		2.23	83.37	3.15	11.31
Standard deviation		2.04	0.89	0.11	1.53		1.36	3.19	2.52	2.60
Minimum		89.59	0.57	0.00	1.26		0.31	75.13	0.63	4.66
Maximum		97.38	3.90	0.42	8.15		6.29	89.94	11.02	16.07

*Fallen angels that survived to Jan. 1 of the year after they were downgraded. §Investment-grade defaulters. †Rising stars. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Multiyear transitions. Multiyear transitions were also calculated for periods of two up to 20 years. In this case, we compared the rating at the beginning of the multiyear period with the rating at the end. For example, three-year transition matrices were the result of comparing ratings at the beginning of the years 1981-2022 with the ratings at the end of the years 1983-2024. Otherwise, the methodology was identical to that used for single-year transitions.

We calculated average transition matrices on the basis of the multiyear matrices just described. These average matrices are a true summary, the ratios of which represent the historical incidence of the ratings listed in the first column changing to the ones listed in the top row over the course of the multiyear period (see tables 33-40). Transition matrices that present averages over multiple time horizons are also calculated as issuer-weighted averages.

Rating modifiers. We use rating modifiers (plus and minus signs) to calculate upgrade and downgrade percentages, as well as the magnitude of rating changes, throughout this study. However, some transition tables may use full rating categories for practical reasons. In other words, the use of a rating category suggests that transitions, for example, to 'AA' from 'AA-' or to 'BBB+' from 'BBB-', are not considered to be rating transitions because the rating remained within the rating category.

Comparing transition rates with default rates. Rating transition rates may be compared with the marginal and cumulative default rates described in the previous sections. For example, the one-year default rate column of table 24 is equivalent to column 'D' of the average one-year transition matrix in table 21, as well as the cumulative average in the "Summary statistics" of the one-year column in table 32.

However, the two-year default rate column in table 24 is not the same as column 'D' of the average two-year transition matrix in table 34. This difference results from the different methods of calculating default rates. The default rates in table 34 are calculated as not conditional on survival, while those in table 24 are average default rates conditional on survival. The two-year default rates in table 24 are calculated in the same way as those in the cumulative average section for the two-year column in table 32, while those in the 'D' column of table 34 are equivalent to adding up all the defaults behind the two-year column's annual default rates in table 32, divided by the sum of all the issuers in table 32 for the years 1981-2024.

The links between transition matrices and average cumulative default rates are best illustrated through tables 30-32. The default rates in the columns of these tables, associated with each static pool year, are calculated in the same way as they would be for individual years' one-year transition matrices. Tables 30, 31, and 32 are broken out by the broadest rating classifications (all rated, investment grade, and speculative grade). These tables can also be constructed for each rating category.

As an example, the two-year column of table 32 shows the two-year default rates (not conditional on survival) for each static pool. These are calculated in the same way as the default column in table 20, though table 20 shows the one-year default rates for each rating category for 2024 exclusively. In the summary section at the bottom of tables 30-32, the first row shows the issuer-weighted averages of the marginal default rates. These marginal averages are then used to calculate the cumulative average default rates in the row directly beneath them, as explained in the "Average cumulative default rate" section above. These default rates are the same that appear in table 24 and are average cumulative default rates conditional on survival.

Standard deviations. Many of the tables and charts in this study display averages of default rates, transition rates, and Gini ratios. Often these are issuer-weighted averages. Prior studies have shown that fluctuations within default rates and transitions can vary greatly depending on many circumstances specific to particular time frames, industries, and geographic regions. As a supplement to many of the averages and time series presented in this study, standard deviations are also shown to provide a gauge of the dispersion of data behind these averages.

For the transition matrices in tables 21-23 and 33-44, the standard deviation for each cell in a given matrix is a weighted standard deviation, calculated using the data from each of the underlying cohort years that contribute to the averages, weighted by that cohort year's issuer base for each rating level.

For the Gini ratios in tables 2, 27, and 28, the standard deviations are derived from the time series of Gini ratios for all of their constituent annual cohorts. As an example, the standard deviation applied to the seven-year weighted average global Gini ratio in table 2 (5.3%) was calculated from the time series of all available seven-year Gini ratios by cohort. In this case, these are the seven-year Gini ratios from the 1981 cohort through the 2018 seven-year cohort. We calculated standard deviations for Gini ratios in this study as the standard deviations of a sample, and not those of a population.

Time sample. This study limits the reporting of default rates to the 15-year time horizon. However, the data was gathered for 44 years, and all calculations are based on the rating experience of that period. In addition, average default statistics become less reliable at longer time horizons as the sample size becomes smaller and the cyclical nature of default rates has a bigger effect on averages.

Table 30

Static-pool cumulative global corporate default rates among all ratings, 1981-2024

(%)	Issuers (no.)	--Time horizon--														
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
1981	1,349	0.15	1.41	2.15	2.97	3.63	5.04	5.49	6.30	6.89	8.01	9.71	10.16	10.67	10.75	10.97
1982	1,398	1.22	1.93	2.79	3.51	4.94	5.29	6.08	6.58	7.73	9.59	10.09	10.66	10.73	10.94	10.94
1983	1,421	0.77	1.62	2.46	4.15	4.57	5.63	6.12	7.25	9.29	9.85	10.42	10.49	10.70	10.70	10.77
1984	1,512	0.93	1.98	3.90	4.37	5.42	6.15	7.34	9.06	9.66	10.25	10.32	10.52	10.52	10.65	10.65
1985	1,603	1.12	3.12	3.68	5.05	5.93	7.24	9.11	9.67	10.17	10.23	10.54	10.54	10.67	10.67	10.98
1986	1,851	1.73	2.32	3.62	4.48	5.89	7.78	8.43	8.97	9.13	9.40	9.51	9.72	9.83	10.10	10.48
1987	2,015	0.94	2.38	3.82	5.66	8.19	9.28	10.02	10.27	10.62	10.77	10.97	11.07	11.36	11.81	12.85
1988	2,103	1.38	3.00	5.14	8.18	9.27	10.03	10.27	10.75	10.89	11.17	11.36	11.70	12.36	13.27	14.27
1989	2,142	1.77	4.34	7.84	9.01	9.80	10.13	10.55	10.69	10.97	11.34	11.67	12.28	13.21	14.15	14.61
1990	2,141	2.71	6.07	7.47	8.27	8.59	9.06	9.15	9.53	10.00	10.42	11.16	12.10	13.12	13.64	13.78
1991	2,078	3.22	4.72	5.25	5.58	6.11	6.21	6.54	6.98	7.41	8.08	9.10	10.20	10.68	10.88	11.02
1992	2,154	1.49	2.00	2.32	2.92	3.06	3.39	3.81	4.18	4.87	5.85	6.96	7.38	7.57	7.71	7.85
1993	2,337	0.60	1.07	1.97	2.18	2.57	3.00	3.42	4.19	5.31	6.46	6.89	7.06	7.23	7.45	7.57
1994	2,563	0.62	1.76	2.15	2.61	3.08	3.94	4.96	6.28	7.49	8.00	8.23	8.39	8.66	8.78	9.36
1995	2,866	1.05	1.54	2.02	2.62	3.59	4.61	6.45	7.85	8.48	8.72	8.93	9.18	9.28	9.80	10.68
1996	3,127	0.51	1.09	1.85	3.01	4.03	5.79	7.32	8.03	8.31	8.54	8.76	8.89	9.43	10.30	10.43
1997	3,487	0.63	1.63	2.95	4.36	6.34	8.12	9.06	9.35	9.58	9.87	10.01	10.61	11.47	11.56	11.67
1998	4,085	1.30	3.26	5.24	7.86	10.04	11.29	11.77	12.09	12.41	12.56	13.19	14.15	14.25	14.37	14.49
1999	4,544	2.16	4.64	7.94	10.81	12.30	12.85	13.20	13.56	13.71	14.50	15.65	15.82	15.96	16.11	16.20
2000	4,716	2.46	6.00	9.16	10.86	11.56	12.00	12.36	12.57	13.44	14.82	14.99	15.16	15.31	15.46	15.52
2001	4,840	3.70	7.21	9.15	9.86	10.37	10.72	10.93	11.76	13.20	13.39	13.55	13.72	13.90	13.97	14.21
2002	4,882	3.52	5.51	6.31	6.76	7.11	7.31	8.23	9.81	10.02	10.18	10.36	10.61	10.67	10.92	11.18
2003	4,888	1.88	2.68	3.17	3.56	3.76	4.73	6.53	6.79	6.96	7.22	7.51	7.59	7.86	8.12	8.41
2004	5,045	0.77	1.31	1.70	1.94	2.97	4.96	5.29	5.51	5.81	6.09	6.16	6.44	6.72	7.00	7.14
2005	5,334	0.60	1.01	1.35	2.55	4.84	5.32	5.62	5.96	6.26	6.39	6.75	7.05	7.29	7.42	7.71
2006	5,495	0.47	0.87	2.31	5.00	5.62	6.04	6.53	6.90	7.04	7.42	7.81	8.04	8.19	8.46	8.79
2007	5,678	0.37	2.03	5.25	6.11	6.57	7.17	7.59	7.77	8.22	8.65	8.89	9.02	9.30	9.69	9.74
2008	5,752	1.79	5.55	6.62	7.08	7.81	8.21	8.47	8.99	9.46	9.72	9.94	10.22	10.74	10.81	10.97
2009	5,638	4.15	5.30	5.78	6.53	6.94	7.22	7.75	8.30	8.58	8.82	9.06	9.60	9.67	9.81	9.95
2010	5,338	1.20	1.89	2.74	3.20	3.60	4.16	4.91	5.26	5.51	5.83	6.48	6.54	6.67	6.80	6.95
2011	5,653	0.80	1.91	2.60	3.08	3.86	4.79	5.18	5.43	5.73	6.49	6.58	6.74	6.92	7.11	
2012	5,836	1.13	2.06	2.55	3.44	4.54	5.07	5.43	5.77	6.58	6.68	6.84	7.04	7.27		
2013	6,069	1.02	1.61	2.78	4.15	4.83	5.22	5.59	6.48	6.61	6.84	7.07	7.33			
2014	6,511	0.69	1.97	3.55	4.41	4.96	5.45	6.54	6.68	6.99	7.33	7.65				
2015	6,915	1.36	3.28	4.25	4.92	5.61	7.00	7.20	7.55	7.87	8.23					

Table 30

Static-pool cumulative global corporate default rates among all ratings, 1981-2024 (cont.)

(%)	Issuers (no.)	--Time horizon--														
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
2016	6,912	2.08	3.11	3.89	4.60	6.16	6.44	6.80	7.19	7.58						
2017	6,878	1.21	2.11	3.01	4.87	5.22	5.64	6.11	6.57							
2018	6,947	1.02	2.13	4.29	4.76	5.37	6.00	6.55								
2019	7,195	1.31	3.79	4.38	5.00	5.85	6.59									
2020	7,161	2.76	3.46	4.18	5.11	5.95										
2021	7,074	0.85	1.70	2.97	3.94											
2022	7,207	0.99	2.53	3.79												
2023	6,986	1.86	3.35													
2024	6,815	1.91														
Summary statistics																
Marginal average		1.50	1.43	1.26	1.06	0.90	0.76	0.63	0.54	0.48	0.45	0.38	0.32	0.30	0.27	0.27
Cumulative average		1.50	2.91	4.13	5.15	6.00	6.72	7.31	7.81	8.26	8.67	9.02	9.31	9.58	9.83	10.07
Standard deviation		0.93	1.58	2.04	2.31	2.42	2.38	2.33	2.32	2.33	2.36	2.41	2.48	2.53	2.55	2.54
Median		1.20	2.13	3.65	4.60	5.62	6.15	6.67	7.55	8.27	8.72	9.30	10.16	10.59	10.67	10.86
Minimum		0.15	0.87	1.35	1.94	2.57	3.00	3.42	4.18	4.87	5.83	6.16	6.44	6.67	6.80	6.95
Maximum		4.15	7.21	9.16	10.86	12.30	12.85	13.20	13.56	13.71	14.82	15.65	15.82	15.96	16.11	16.20

Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 31

Static-pool cumulative global corporate default rates among investment-grade ratings, 1981-2024

(%)	Issuers (no.)	--Time horizon--														
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
1981	1,031	0.00	0.39	0.39	0.48	0.68	1.07	1.36	2.13	2.33	3.10	4.17	4.36	4.56	4.56	4.75
1982	1,062	0.19	0.28	0.38	0.56	1.04	1.32	2.07	2.26	3.11	4.24	4.52	4.80	4.80	4.99	4.99
1983	1,083	0.09	0.37	0.46	0.92	1.11	1.57	1.66	2.49	3.60	3.97	4.25	4.25	4.43	4.43	4.43
1984	1,147	0.17	0.26	0.61	0.78	1.13	1.31	2.01	2.96	3.31	3.57	3.57	3.75	3.75	3.84	3.84
1985	1,188	0.00	0.17	0.25	0.76	0.93	1.68	2.69	3.03	3.28	3.28	3.54	3.54	3.70	3.70	3.87
1986	1,327	0.15	0.15	0.53	0.68	1.21	2.11	2.49	2.64	2.64	2.86	2.86	3.01	3.09	3.24	3.54
1987	1,342	0.00	0.15	0.37	0.82	1.71	2.24	2.38	2.46	2.61	2.61	2.76	2.83	2.98	3.13	3.95
1988	1,355	0.00	0.22	0.37	0.96	1.48	1.62	1.70	1.85	1.85	1.99	1.99	2.14	2.29	2.95	3.76
1989	1,398	0.21	0.36	0.64	1.22	1.36	1.43	1.57	1.57	1.57	1.57	1.79	1.93	2.72	3.36	3.72

Table 31

Static-pool cumulative global corporate default rates among investment-grade ratings, 1981-2024 (cont.)

Year	Issuers (no.)	--Time horizon--														
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
1990	1,450	0.14	0.34	0.76	0.97	1.03	1.17	1.17	1.17	1.24	1.59	1.93	2.62	3.17	3.52	3.59
1991	1,488	0.13	0.27	0.40	0.47	0.60	0.60	0.60	0.67	1.08	1.41	2.15	2.69	2.96	3.02	3.09
1992	1,629	0.00	0.06	0.12	0.25	0.25	0.25	0.31	0.61	0.86	1.41	1.90	2.15	2.21	2.33	2.52
1993	1,777	0.00	0.06	0.17	0.17	0.23	0.39	0.73	1.07	1.69	2.31	2.53	2.53	2.64	2.76	2.81
1994	1,854	0.05	0.16	0.16	0.27	0.38	0.81	1.08	1.67	2.27	2.54	2.59	2.64	2.80	2.86	3.24
1995	2,046	0.05	0.05	0.10	0.24	0.73	0.98	1.71	2.30	2.54	2.59	2.64	2.79	2.83	3.23	3.57
1996	2,242	0.00	0.04	0.13	0.54	0.85	1.56	2.10	2.32	2.41	2.45	2.59	2.59	2.99	3.43	3.48
1997	2,491	0.08	0.20	0.52	0.84	1.41	2.13	2.49	2.57	2.61	2.73	2.73	3.13	3.53	3.57	3.69
1998	2,777	0.14	0.43	0.79	1.37	2.38	2.81	2.99	3.10	3.17	3.17	3.64	4.18	4.25	4.39	4.54
1999	2,893	0.17	0.48	0.90	1.87	2.32	2.45	2.56	2.70	2.70	3.21	3.87	3.94	4.08	4.25	4.29
2000	2,960	0.24	0.57	1.52	1.99	2.09	2.23	2.36	2.36	2.94	3.61	3.68	3.85	3.99	4.02	4.09
2001	3,067	0.23	1.21	1.63	1.79	1.96	2.09	2.09	2.61	3.33	3.36	3.52	3.68	3.75	3.78	3.98
2002	3,181	0.41	0.75	0.88	1.01	1.07	1.07	1.60	2.26	2.29	2.42	2.58	2.67	2.70	2.89	2.99
2003	3,099	0.10	0.19	0.29	0.32	0.32	0.84	1.58	1.61	1.71	1.77	1.87	1.90	2.13	2.23	2.29
2004	3,165	0.03	0.09	0.13	0.13	0.63	1.26	1.33	1.42	1.52	1.61	1.61	1.83	1.93	1.96	1.99
2005	3,271	0.03	0.06	0.06	0.61	1.19	1.28	1.38	1.47	1.56	1.56	1.77	1.86	1.86	1.90	1.96
2006	3,298	0.00	0.00	0.49	0.91	1.00	1.09	1.15	1.24	1.24	1.43	1.49	1.49	1.49	1.52	1.58
2007	3,373	0.00	0.47	0.92	1.10	1.19	1.27	1.33	1.33	1.48	1.54	1.54	1.54	1.57	1.66	1.69
2008	3,352	0.42	0.81	0.95	1.07	1.16	1.22	1.22	1.37	1.49	1.49	1.52	1.55	1.61	1.64	1.70
2009	3,384	0.33	0.44	0.53	0.59	0.62	0.62	0.77	0.89	0.89	0.92	0.95	1.00	1.03	1.09	1.18
2010	3,219	0.00	0.03	0.06	0.09	0.09	0.25	0.37	0.37	0.43	0.50	0.53	0.56	0.62	0.71	0.81
2011	3,271	0.03	0.06	0.06	0.06	0.09	0.24	0.24	0.31	0.37	0.46	0.49	0.55	0.64	0.76	
2012	3,287	0.00	0.00	0.00	0.03	0.21	0.21	0.27	0.33	0.43	0.49	0.55	0.64	0.73		
2013	3,294	0.00	0.00	0.00	0.15	0.15	0.24	0.30	0.43	0.46	0.55	0.64	0.73			
2014	3,383	0.00	0.00	0.15	0.15	0.24	0.33	0.47	0.50	0.62	0.71	0.83				
2015	3,524	0.00	0.06	0.06	0.14	0.20	0.37	0.43	0.51	0.60	0.68					
2016	3,534	0.03	0.03	0.11	0.17	0.37	0.40	0.48	0.57	0.65						
2017	3,522	0.00	0.00	0.06	0.17	0.20	0.26	0.31	0.40							
2018	3,525	0.00	0.06	0.11	0.14	0.20	0.26	0.34								
2019	3,589	0.06	0.08	0.11	0.14	0.22	0.33									
2020	3,586	0.00	0.00	0.03	0.11	0.28										
2021	3,512	0.00	0.00	0.06	0.17											
2022	3,539	0.00	0.06	0.17												
2023	3,533	0.06	0.14													

Table 31

Static-pool cumulative global corporate default rates among investment-grade ratings, 1981-2024 (cont.)

Issuers (%)	Issuers (no.)	--Time horizon--														
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
2024	3,539	0.03														
Summary statistics																
Marginal average		0.08	0.13	0.16	0.20	0.21	0.20	0.19	0.18	0.18	0.17	0.16	0.14	0.13	0.13	0.14
Cumulative average		0.08	0.21	0.37	0.57	0.77	0.98	1.17	1.34	1.52	1.69	1.85	1.98	2.11	2.24	2.38
Standard deviation		0.11	0.26	0.39	0.52	0.64	0.73	0.82	0.90	0.99	1.08	1.15	1.18	1.17	1.14	1.11
Median		0.03	0.15	0.27	0.54	0.79	1.09	1.35	1.57	1.70	1.99	2.34	2.62	2.82	3.13	3.55
Minimum		0.00	0.00	0.00	0.03	0.09	0.21	0.24	0.31	0.37	0.46	0.49	0.55	0.62	0.71	0.81
Maximum		0.42	1.21	1.63	1.99	2.38	2.81	2.99	3.10	3.60	4.24	4.52	4.80	4.80	4.99	4.99

Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 32

Static-pool cumulative global corporate default rates among speculative-grade ratings, 1981-2024

Issuers (%)	Issuers (no.)	--Time horizon--														
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
1981	318	0.63	4.72	7.86	11.01	13.21	17.92	18.87	19.81	21.70	23.90	27.67	28.93	30.50	30.82	31.13
1982	336	4.46	7.14	10.42	12.80	17.26	17.86	18.75	20.24	22.32	26.49	27.68	29.17	29.46	29.76	29.76
1983	338	2.96	5.62	8.88	14.50	15.68	18.64	20.41	22.49	27.51	28.70	30.18	30.47	30.77	30.77	31.07
1984	365	3.29	7.40	14.25	15.62	18.90	21.37	24.11	28.22	29.59	31.23	31.51	31.78	31.78	32.05	32.05
1985	415	4.34	11.57	13.49	17.35	20.24	23.13	27.47	28.67	29.88	30.12	30.60	30.60	30.60	30.60	31.33
1986	524	5.73	7.82	11.45	14.12	17.75	22.14	23.47	25.00	25.57	25.95	26.34	26.72	26.91	27.48	28.05
1987	673	2.82	6.84	10.70	15.30	21.10	23.33	25.26	25.85	26.60	27.04	27.34	27.49	28.08	29.12	30.61
1988	748	3.88	8.02	13.77	21.26	23.40	25.27	25.80	26.87	27.27	27.81	28.34	29.01	30.61	31.95	33.29
1989	744	4.70	11.83	21.37	23.66	25.67	26.48	27.42	27.82	28.63	29.70	30.24	31.72	32.93	34.41	35.08
1990	691	8.10	18.09	21.56	23.59	24.46	25.62	25.90	27.06	28.36	28.94	30.54	31.98	34.01	34.88	35.17
1991	590	11.02	15.93	17.46	18.47	20.00	20.34	21.53	22.88	23.39	24.92	26.61	29.15	30.17	30.68	31.02
1992	525	6.10	8.00	9.14	11.24	11.81	13.14	14.67	15.24	17.33	19.62	22.67	23.62	24.19	24.38	24.38
1993	560	2.50	4.29	7.68	8.57	10.00	11.25	11.96	14.11	16.79	19.64	20.71	21.43	21.79	22.32	22.68
1994	709	2.12	5.92	7.33	8.74	10.16	12.13	15.09	18.34	21.16	22.28	22.99	23.41	23.98	24.26	25.39
1995	820	3.54	5.24	6.83	8.54	10.73	13.66	18.29	21.71	23.29	24.02	24.63	25.12	25.37	26.22	28.41
1996	885	1.81	3.73	6.21	9.27	12.09	16.50	20.56	22.49	23.28	23.95	24.41	24.86	25.76	27.68	28.02
1997	996	2.01	5.22	9.04	13.15	18.67	23.09	25.50	26.31	27.01	27.71	28.21	29.32	31.33	31.53	31.63

Table 32

Static-pool cumulative global corporate default rates among speculative-grade ratings, 1981-2024 (cont.)

Issuers (%)	Issuers (no.)	--Time horizon--														
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
1998	1,308	3.75	9.25	14.68	21.64	26.30	29.28	30.43	31.19	32.03	32.49	33.49	35.32	35.47	35.55	35.63
1999	1,651	5.63	11.93	20.29	26.47	29.80	31.07	31.86	32.59	33.01	34.28	36.28	36.64	36.77	36.89	37.07
2000	1,756	6.21	15.15	22.04	25.80	27.51	28.47	29.21	29.78	31.15	33.71	34.05	34.23	34.40	34.74	34.79
2001	1,773	9.70	17.60	22.17	23.80	24.93	25.66	26.23	27.58	30.29	30.74	30.91	31.08	31.47	31.58	31.92
2002	1,701	9.35	14.40	16.46	17.52	18.40	18.99	20.63	23.93	24.46	24.69	24.93	25.46	25.57	25.93	26.51
2003	1,789	4.97	6.99	8.16	9.17	9.73	11.46	15.09	15.76	16.04	16.66	17.27	17.44	17.78	18.33	19.01
2004	1,880	2.02	3.35	4.36	5.00	6.91	11.17	11.97	12.39	13.03	13.62	13.83	14.20	14.79	15.48	15.80
2005	2,063	1.50	2.52	3.39	5.62	10.62	11.73	12.36	13.09	13.72	14.06	14.64	15.27	15.90	16.19	16.82
2006	2,197	1.18	2.18	5.05	11.15	12.56	13.47	14.61	15.38	15.75	16.43	17.30	17.89	18.25	18.89	19.62
2007	2,305	0.91	4.30	11.58	13.45	14.45	15.79	16.75	17.18	18.09	19.05	19.65	19.96	20.61	21.43	21.52
2008	2,400	3.71	12.17	14.54	15.46	17.08	17.96	18.58	19.63	20.58	21.21	21.71	22.33	23.50	23.63	23.92
2009	2,254	9.89	12.60	13.66	15.44	16.42	17.13	18.23	19.43	20.14	20.67	21.25	22.49	22.63	22.89	23.11
2010	2,119	3.02	4.72	6.80	7.93	8.92	10.10	11.80	12.69	13.21	13.92	15.53	15.62	15.86	16.05	16.28
2011	2,382	1.85	4.45	6.09	7.22	9.03	11.04	11.96	12.47	13.10	14.78	14.95	15.24	15.53	15.83	
2012	2,549	2.59	4.71	5.85	7.85	10.12	11.34	12.08	12.79	14.52	14.67	14.95	15.30	15.69		
2013	2,775	2.23	3.53	6.09	8.90	10.38	11.14	11.86	13.66	13.91	14.31	14.70	15.17			
2014	3,128	1.44	4.09	7.23	9.02	10.07	11.00	13.11	13.36	13.87	14.48	15.03				
2015	3,391	2.77	6.64	8.61	9.88	11.24	13.89	14.24	14.86	15.42	16.07					
2016	3,378	4.23	6.34	7.84	9.24	12.23	12.76	13.41	14.12	14.83						
2017	3,356	2.47	4.32	6.11	9.80	10.49	11.29	12.19	13.05							
2018	3,422	2.07	4.27	8.59	9.53	10.70	11.92	12.95								
2019	3,606	2.55	7.49	8.62	9.84	11.45	12.81									
2020	3,575	5.54	6.94	8.34	10.13	11.64										
2021	3,562	1.68	3.37	5.84	7.66											
2022	3,668	1.94	4.91	7.28												
2023	3,453	3.71	6.63													
2024	3,276	3.94														
Summary statistics																
Marginal average		3.54	3.36	2.97	2.48	2.10	1.75	1.45	1.23	1.10	1.02	0.86	0.74	0.69	0.61	0.59
Cumulative average		3.54	6.78	9.55	11.79	13.64	15.15	16.39	17.41	18.32	19.15	19.85	20.44	20.99	21.47	21.93
Standard deviation		2.52	4.16	5.21	5.81	6.09	6.15	6.19	6.32	6.41	6.48	6.57	6.63	6.59	6.43	6.17
Median		3.15	6.63	8.62	11.15	12.89	16.50	18.44	19.81	22.01	23.95	24.78	25.46	26.34	27.68	29.09

Table 32

Static-pool cumulative global corporate default rates among speculative-grade ratings, 1981-2024 (cont.)

		--Time horizon--														
	Issuers															
(%)	(no.)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
Minimum		0.63	2.18	3.39	5.00	6.91	10.10	11.80	12.39	13.03	13.62	13.83	14.20	14.79	15.48	15.80
Maximum		11.02	18.09	22.17	26.47	29.80	31.07	31.86	32.59	33.01	34.28	36.28	36.64	36.77	36.89	37.07

Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 33

Average multiyear global corporate transition matrices, 1981-2024 (%)**One-year transition rates**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
AAA	87.28 (7.37)	8.92 (7.16)	0.51 (0.81)	0.03 (0.13)	0.10 (0.26)	0.03 (0.17)	0.05 (0.34)	0.00 (0.00)	3.08 (2.45)
AA	0.45 (0.52)	87.74 (5.18)	7.50 (4.19)	0.44 (0.65)	0.05 (0.18)	0.06 (0.19)	0.02 (0.06)	0.02 (0.07)	3.74 (1.69)
A	0.02 (0.08)	1.48 (1.04)	89.42 (4.06)	4.64 (2.21)	0.23 (0.36)	0.10 (0.22)	0.01 (0.06)	0.05 (0.10)	4.04 (1.71)
BBB	0.00 (0.03)	0.07 (0.14)	3.05 (1.58)	87.33 (4.09)	3.21 (1.67)	0.40 (0.62)	0.09 (0.19)	0.14 (0.23)	5.71 (1.52)
BB	0.01 (0.05)	0.02 (0.08)	0.10 (0.22)	4.44 (1.88)	78.89 (4.81)	6.25 (3.14)	0.50 (0.65)	0.56 (0.76)	9.23 (2.21)
B	0.00 (0.00)	0.02 (0.07)	0.06 (0.17)	0.14 (0.19)	4.47 (1.98)	75.18 (3.81)	4.79 (2.59)	2.93 (2.87)	12.41 (2.28)
CCC/C	0.00 (0.00)	0.00 (0.00)	0.07 (0.34)	0.13 (0.53)	0.40 (0.79)	13.18 (7.18)	45.07 (8.17)	26.12 (11.29)	15.03 (4.37)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 34

Average multiyear global corporate transition matrices, 1981-2024 (%)**Two-year transition rates**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
AAA	76.09 (10.45)	15.95 (10.50)	1.41 (1.44)	0.08 (0.24)	0.21 (0.41)	0.05 (0.23)	0.10 (0.40)	0.03 (0.17)	6.09 (4.21)
AA	0.78 (0.71)	77.18 (8.20)	13.30 (5.96)	1.14 (1.09)	0.16 (0.32)	0.12 (0.27)	0.02 (0.06)	0.05 (0.11)	7.24 (2.71)
A	0.04	2.64	80.17	8.14	0.59	0.21	0.03	0.12	8.06

Table 34

Average multiyear global corporate transition matrices, 1981-2024 (%) (cont.)**Two-year transition rates**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
	(0.07)	(1.72)	(6.63)	(3.07)	(0.75)	(0.38)	(0.10)	(0.18)	(2.80)
BBB	0.01	0.14	5.61	76.75	5.17	0.88	0.17	0.38	10.88
	(0.07)	(0.22)	(2.49)	(6.59)	(2.14)	(1.00)	(0.27)	(0.58)	(2.45)
BB	0.01	0.03	0.24	7.82	62.60	9.44	0.93	1.77	17.16
	(0.05)	(0.09)	(0.44)	(2.94)	(6.92)	(2.95)	(0.82)	(1.99)	(2.99)
B	0.00	0.02	0.10	0.33	7.40	56.66	5.78	6.98	22.73
	(0.00)	(0.09)	(0.26)	(0.39)	(3.09)	(4.76)	(2.31)	(5.19)	(3.63)
CCC/C	0.00	0.00	0.10	0.33	0.80	16.95	22.18	35.79	23.84
	(0.00)	(0.00)	(0.39)	(0.98)	(1.02)	(7.01)	(7.53)	(12.54)	(5.99)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 35

Average multiyear global corporate transition matrices, 1981-2024 (%)**Three-year transition rates**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
AAA	65.98	21.90	2.29	0.31	0.21	0.08	0.10	0.13	9.01
	(11.96)	(12.13)	(1.68)	(0.75)	(0.46)	(0.29)	(0.41)	(0.36)	(5.28)
AA	1.04	68.20	17.67	1.84	0.30	0.19	0.02	0.11	10.62
	(0.87)	(9.65)	(6.23)	(1.43)	(0.48)	(0.42)	(0.07)	(0.18)	(3.76)
A	0.05	3.46	72.29	10.62	0.98	0.34	0.07	0.20	11.98
	(0.09)	(2.16)	(8.08)	(3.15)	(1.00)	(0.56)	(0.13)	(0.26)	(3.61)
BBB	0.01	0.21	7.53	68.14	6.29	1.31	0.23	0.67	15.60
	(0.05)	(0.35)	(2.96)	(7.96)	(2.19)	(1.21)	(0.32)	(0.86)	(3.18)
BB	0.01	0.04	0.39	10.09	50.52	10.75	1.10	3.18	23.93
	(0.05)	(0.11)	(0.62)	(3.43)	(8.03)	(2.85)	(0.82)	(3.19)	(3.46)
B	0.00	0.02	0.14	0.59	8.79	43.11	5.39	10.60	31.37
	(0.04)	(0.09)	(0.38)	(0.69)	(3.46)	(5.02)	(1.96)	(6.57)	(4.50)
CCC/C	0.00	0.00	0.08	0.40	1.34	16.44	10.83	41.07	29.85
	(0.00)	(0.00)	(0.41)	(1.00)	(1.40)	(6.46)	(5.54)	(11.86)	(7.31)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 36

Average multiyear global corporate transition matrices, 1981-2024 (%)**Five-year transition rates**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
AAA	50.08	28.63	4.73	0.85	0.23	0.16	0.08	0.34	14.91
	(12.30)	(13.29)	(2.73)	(1.50)	(0.45)	(0.40)	(0.27)	(0.57)	(6.79)
AA	1.30	53.71	23.71	3.24	0.49	0.33	0.04	0.28	16.92
	(1.02)	(9.76)	(5.12)	(1.91)	(0.62)	(0.56)	(0.09)	(0.37)	(4.52)
A	0.06	4.44	59.85	13.84	1.61	0.54	0.11	0.41	19.13
	(0.09)	(2.43)	(9.41)	(2.82)	(1.24)	(0.80)	(0.17)	(0.44)	(4.39)
BBB	0.02	0.33	9.72	55.52	7.11	1.79	0.30	1.42	23.79
	(0.06)	(0.49)	(3.00)	(8.72)	(1.73)	(1.38)	(0.35)	(1.37)	(4.14)
BB	0.01	0.06	0.77	11.78	35.27	10.74	1.10	6.00	34.29
	(0.05)	(0.15)	(0.89)	(3.08)	(8.26)	(2.02)	(0.84)	(4.71)	(3.64)
B	0.01	0.02	0.17	1.12	8.90	26.29	3.53	16.37	43.60
	(0.08)	(0.07)	(0.46)	(1.12)	(3.03)	(4.47)	(1.22)	(7.48)	(5.71)
CCC/C	0.00	0.00	0.07	0.57	2.34	11.59	2.54	48.18	34.70
	(0.00)	(0.00)	(0.40)	(1.47)	(1.93)	(4.73)	(3.10)	(11.38)	(7.89)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 37

Average multiyear global corporate transition matrices, 1981-2024 (%)**Seven-year transition rates**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
AAA	38.53	32.69	6.77	1.50	0.23	0.18	0.10	0.49	19.49
	(11.32)	(13.65)	(3.05)	(1.85)	(0.46)	(0.42)	(0.30)	(0.70)	(7.27)
AA	1.37	42.89	27.08	4.30	0.65	0.33	0.03	0.47	22.90
	(1.03)	(8.68)	(4.11)	(2.01)	(0.62)	(0.49)	(0.08)	(0.53)	(4.66)
A	0.06	4.83	50.61	15.56	2.05	0.64	0.11	0.71	25.43
	(0.11)	(1.99)	(9.01)	(2.21)	(1.35)	(0.84)	(0.16)	(0.60)	(4.30)
BBB	0.03	0.43	10.83	46.69	7.03	1.96	0.30	2.15	30.58
	(0.09)	(0.54)	(2.50)	(8.19)	(1.02)	(1.17)	(0.31)	(1.74)	(4.42)
BB	0.00	0.06	1.07	12.25	26.17	9.59	0.90	8.50	41.46
	(0.00)	(0.15)	(1.00)	(2.81)	(7.30)	(1.99)	(0.60)	(5.63)	(3.30)
B	0.00	0.01	0.23	1.55	8.07	17.42	2.02	20.23	50.46
	(0.06)	(0.07)	(0.50)	(1.34)	(2.19)	(3.90)	(0.68)	(7.57)	(5.91)
CCC/C	0.00	0.00	0.20	0.81	3.13	6.93	2.10	48.83	38.01

Table 37

Average multiyear global corporate transition matrices, 1981-2024 (%) (cont.)**Seven-year transition rates**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
	(0.00)	(0.00)	(0.50)	(1.73)	(1.97)	(3.66)	(2.52)	(10.31)	(8.07)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 38

Average multiyear global corporate transition matrices, 1981-2024 (%)**10-year transition rates**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
AAA	25.46	35.21	9.20	2.67	0.13	0.18	0.05	0.68	26.40
	(9.37)	(14.02)	(3.41)	(2.27)	(0.28)	(0.46)	(0.22)	(0.73)	(7.16)
AA	1.15	30.98	29.07	6.09	0.82	0.36	0.02	0.71	30.80
	(0.87)	(7.37)	(3.33)	(2.32)	(0.73)	(0.35)	(0.07)	(0.61)	(4.28)
A	0.09	4.93	40.34	16.60	2.32	0.75	0.10	1.18	33.68
	(0.16)	(1.52)	(7.96)	(2.20)	(1.00)	(0.66)	(0.15)	(0.90)	(4.53)
BBB	0.02	0.52	11.24	37.28	6.48	1.97	0.23	3.27	38.99
	(0.08)	(0.59)	(2.62)	(7.27)	(1.01)	(1.07)	(0.21)	(2.26)	(4.09)
BB	0.01	0.07	1.47	11.59	18.02	7.88	0.68	12.04	48.25
	(0.06)	(0.11)	(0.96)	(2.40)	(5.37)	(1.85)	(0.35)	(6.46)	(2.57)
B	0.00	0.02	0.26	2.04	6.79	10.22	1.08	24.43	55.15
	(0.00)	(0.06)	(0.52)	(1.50)	(1.67)	(2.84)	(0.53)	(8.16)	(6.04)
CCC/C	0.00	0.00	0.10	0.75	3.47	3.67	1.12	49.76	41.13
	(0.00)	(0.00)	(0.46)	(0.81)	(2.42)	(2.72)	(1.77)	(10.97)	(8.77)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 39

Average multiyear global corporate transition matrices, 1981-2024 (%)**15-year transition rates**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
AAA	12.61	34.44	13.32	2.85	0.52	0.35	0.05	0.90	34.96
	(6.88)	(12.32)	(3.89)	(1.29)	(0.44)	(0.55)	(0.19)	(0.75)	(4.64)
AA	0.72	18.36	28.48	8.35	0.96	0.50	0.02	1.07	41.53
	(0.79)	(3.82)	(3.32)	(2.37)	(0.80)	(0.47)	(0.09)	(0.58)	(2.79)
A	0.12	4.11	28.63	17.16	2.55	0.89	0.10	2.01	44.43
	(0.17)	(1.23)	(5.44)	(1.51)	(1.03)	(0.53)	(0.10)	(1.08)	(3.93)
BBB	0.00	0.58	10.34	27.14	5.16	1.83	0.18	5.22	49.54

Table 39

Average multiyear global corporate transition matrices, 1981-2024 (%) (cont.)**15-year transition rates**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
	(0.00)	(0.46)	(2.82)	(4.94)	(0.72)	(1.02)	(0.19)	(2.72)	(2.91)
BB	0.00	0.13	1.79	9.61	10.81	5.18	0.47	16.78	55.23
	(0.00)	(0.16)	(0.92)	(2.17)	(3.24)	(1.52)	(0.29)	(6.51)	(3.36)
B	0.00	0.06	0.45	2.55	4.27	4.84	0.56	30.56	56.71
	(0.00)	(0.10)	(0.40)	(1.33)	(1.18)	(1.39)	(0.32)	(8.32)	(6.36)
CCC/C	0.00	0.00	0.42	1.02	2.59	1.66	0.14	53.60	40.58
	(0.00)	(0.00)	(1.14)	(1.10)	(2.03)	(1.33)	(0.62)	(11.73)	(10.32)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 40

Average multiyear global corporate transition matrices, 1981-2024 (%)**20-year transition rates**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
AAA	5.38	29.68	17.06	3.68	0.76	0.64	0.06	1.19	41.55
	(3.86)	(8.96)	(4.90)	(1.41)	(0.47)	(0.67)	(0.19)	(0.81)	(5.48)
AA	0.50	11.13	25.20	10.25	1.12	0.61	0.05	1.53	49.61
	(0.61)	(3.12)	(4.08)	(2.68)	(0.69)	(0.52)	(0.13)	(0.90)	(2.61)
A	0.12	2.79	21.10	16.34	2.58	1.05	0.15	3.18	52.70
	(0.19)	(0.95)	(3.76)	(1.52)	(0.89)	(0.73)	(0.14)	(1.46)	(3.24)
BBB	0.01	0.63	8.46	20.39	4.10	1.53	0.13	7.56	57.19
	(0.06)	(0.26)	(1.99)	(2.89)	(0.75)	(0.66)	(0.16)	(2.70)	(2.21)
BB	0.00	0.16	1.69	7.70	6.80	3.55	0.37	21.59	58.14
	(0.00)	(0.20)	(0.44)	(1.70)	(2.50)	(1.13)	(0.34)	(6.07)	(3.97)
B	0.00	0.15	0.46	2.46	2.71	2.65	0.23	34.99	56.35
	(0.00)	(0.17)	(0.23)	(1.11)	(0.79)	(0.86)	(0.23)	(8.71)	(7.39)
CCC/C	0.00	0.07	0.34	1.31	2.07	0.55	0.21	53.93	41.53
	(0.00)	(0.38)	(0.67)	(1.12)	(2.28)	(0.70)	(0.49)	(12.27)	(11.78)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 41

Average multiyear global corporate transition matrices, 1981-2024 (%)**All financials**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
One-year									
AAA	87.32	9.33	0.32	0.04	0.08	0.04	0.08	0.00	2.79
	(10.13)	(9.61)	(0.95)	(0.22)	(0.36)	(0.23)	(0.47)	(0.00)	(2.63)
AA	0.41	88.02	7.47	0.31	0.02	0.02	0.03	0.03	3.69
	(0.54)	(6.19)	(5.49)	(0.60)	(0.07)	(0.07)	(0.15)	(0.11)	(1.74)
A	0.02	1.88	90.27	3.20	0.15	0.05	0.01	0.07	4.35
	(0.12)	(1.63)	(4.49)	(2.50)	(0.41)	(0.13)	(0.04)	(0.16)	(2.05)
BBB	0.01	0.16	4.07	85.88	2.77	0.33	0.09	0.19	6.52
	(0.07)	(0.44)	(2.76)	(5.06)	(2.33)	(0.78)	(0.23)	(0.44)	(1.97)
BB	0.00	0.07	0.16	5.43	78.55	4.29	0.59	0.55	10.36
	(0.00)	(0.24)	(0.60)	(3.90)	(7.31)	(3.07)	(1.42)	(1.12)	(4.33)
B	0.00	0.02	0.07	0.37	6.17	76.94	3.19	2.22	11.01
	(0.00)	(0.18)	(0.53)	(0.74)	(3.97)	(6.90)	(3.16)	(3.11)	(3.87)
CCC/C	0.00	0.00	0.00	0.00	1.01	15.37	49.16	16.55	17.91
	(0.00)	(0.00)	(0.00)	(0.00)	(3.60)	(12.12)	(20.23)	(15.18)	(10.93)
Three-year									
AAA	65.55	23.44	1.58	0.32	0.12	0.08	0.16	0.20	8.54
	(16.65)	(16.29)	(2.13)	(1.10)	(0.43)	(0.34)	(0.57)	(0.52)	(5.98)
AA	0.96	69.02	17.45	1.51	0.15	0.13	0.03	0.16	10.58
	(1.00)	(11.19)	(8.31)	(1.63)	(0.31)	(0.32)	(0.09)	(0.27)	(3.89)
A	0.06	4.40	74.53	6.76	0.77	0.17	0.08	0.29	12.95
	(0.16)	(3.38)	(9.18)	(3.11)	(1.14)	(0.43)	(0.18)	(0.47)	(4.80)
BBB	0.02	0.44	9.94	65.25	4.66	0.81	0.24	0.86	17.78
	(0.13)	(0.96)	(5.61)	(9.12)	(2.68)	(0.89)	(0.54)	(1.20)	(4.29)
BB	0.00	0.09	0.64	12.17	49.97	6.96	0.77	2.22	27.18
	(0.00)	(0.33)	(1.31)	(6.16)	(11.26)	(3.74)	(1.38)	(3.33)	(6.19)
B	0.00	0.00	0.22	1.34	12.12	48.65	4.07	6.61	26.99
	(0.00)	(0.00)	(0.80)	(2.15)	(5.95)	(9.29)	(2.90)	(6.18)	(5.91)
CCC/C	0.00	0.00	0.19	0.37	1.31	24.30	13.27	24.67	35.89
	(0.00)	(0.00)	(3.09)	(2.50)	(3.43)	(15.60)	(15.01)	(16.01)	(14.36)
10-year									
AAA	22.98	38.27	8.54	2.00	0.08	0.29	0.08	0.94	26.82
	(12.29)	(16.38)	(4.95)	(2.61)	(0.29)	(0.64)	(0.31)	(1.12)	(9.14)
AA	1.01	34.44	28.23	4.05	0.33	0.30	0.02	1.01	30.61
	(1.13)	(9.66)	(6.21)	(2.34)	(0.37)	(0.39)	(0.08)	(1.14)	(5.37)

Table 41

Average multiyear global corporate transition matrices, 1981-2024 (%) (cont.)**All financials**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
A	0.13 (0.35)	6.58 (3.04)	44.30 (8.75)	8.74 (2.68)	1.48 (1.24)	0.39 (0.42)	0.10 (0.20)	1.30 (1.18)	36.98 (5.72)
BBB	0.06 (0.22)	1.17 (2.34)	13.37 (3.07)	31.40 (7.23)	4.10 (1.66)	1.13 (0.48)	0.33 (0.53)	3.25 (2.41)	45.21 (4.78)
BB	0.06 (0.36)	0.11 (0.31)	2.94 (2.92)	14.20 (4.72)	13.78 (6.82)	6.07 (2.80)	0.17 (0.37)	7.05 (7.61)	55.63 (6.21)
B	0.00 (0.00)	0.00 (0.00)	0.90 (2.29)	4.41 (4.64)	8.94 (3.62)	15.18 (6.91)	1.47 (2.03)	15.31 (8.59)	53.80 (8.69)
CCC/C	0.00 (0.00)	0.00 (0.00)	0.24 (3.54)	1.22 (2.16)	5.35 (6.62)	6.81 (7.79)	4.38 (8.11)	30.17 (15.98)	51.82 (13.45)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 42

Average multiyear global corporate transition matrices, 1981-2024 (%)**Insurance**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
One-year									
AAA	88.09 (11.88)	9.77 (11.27)	0.27 (1.28)	0.00 (0.00)	0.07 (0.29)	0.07 (0.42)	0.13 (0.84)	0.00 (0.00)	1.61 (2.34)
AA	0.49 (0.95)	88.45 (6.47)	6.84 (5.55)	0.32 (0.86)	0.04 (0.14)	0.04 (0.13)	0.06 (0.44)	0.04 (0.14)	3.74 (2.10)
A	0.01 (0.06)	2.06 (2.13)	91.32 (4.68)	2.41 (2.44)	0.14 (0.45)	0.06 (0.21)	0.01 (0.05)	0.08 (0.23)	3.92 (1.90)
BBB	0.00 (0.00)	0.14 (0.65)	5.24 (3.42)	84.52 (5.30)	2.29 (2.46)	0.28 (0.91)	0.21 (0.66)	0.16 (0.62)	7.16 (3.01)
BB	0.00 (0.00)	0.08 (0.78)	0.50 (1.94)	7.70 (8.28)	75.23 (11.82)	3.35 (4.16)	1.00 (2.85)	0.50 (1.95)	11.63 (6.84)
B	0.00 (0.00)	0.11 (0.93)	0.23 (2.16)	0.56 (2.41)	5.86 (7.07)	76.80 (11.29)	2.03 (3.64)	1.35 (4.21)	13.06 (6.36)
CCC/C	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	3.53 (11.79)	11.76 (21.32)	40.00 (32.82)	23.53 (28.29)	21.18 (29.28)
Three-year									
AAA	66.62 (18.44)	25.28 (17.17)	1.81 (2.62)	0.07 (0.42)	0.13 (0.52)	0.13 (0.60)	0.27 (1.00)	0.33 (0.83)	5.35 (5.70)

Table 42

Average multiyear global corporate transition matrices, 1981-2024 (%) (cont.)

Insurance

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
AA	1.11	70.36	15.68	1.52	0.16	0.20	0.06	0.23	10.68
	(1.92)	(10.89)	(7.16)	(2.09)	(0.46)	(0.53)	(0.18)	(0.40)	(3.79)
A	0.04	4.69	77.34	4.69	0.51	0.10	0.09	0.35	12.20
	(0.14)	(4.35)	(9.55)	(3.28)	(1.14)	(0.57)	(0.21)	(0.84)	(4.26)
BBB	0.00	0.50	12.64	63.21	3.48	0.70	0.30	0.82	18.37
	(0.00)	(1.38)	(5.91)	(9.27)	(2.77)	(0.91)	(0.93)	(1.62)	(4.83)
BB	0.00	0.09	1.80	15.80	44.79	4.49	1.17	1.89	29.98
	(0.00)	(0.81)	(3.78)	(10.54)	(14.62)	(4.14)	(3.68)	(4.49)	(10.30)
B	0.00	0.00	1.12	2.37	11.08	47.45	1.74	4.23	32.00
	(0.00)	(0.00)	(4.22)	(6.77)	(9.74)	(11.91)	(2.44)	(7.61)	(11.00)
CCC/C	0.00	0.00	1.22	2.44	4.88	14.63	12.20	31.71	32.93
	(0.00)	(0.00)	(11.16)	(10.95)	(11.26)	(23.14)	(14.90)	(30.52)	(31.80)
10-year									
AAA	24.08	41.14	9.43	1.74	0.13	0.47	0.13	1.54	21.34
	(14.66)	(15.25)	(6.40)	(2.60)	(0.46)	(1.13)	(0.53)	(1.62)	(10.67)
AA	1.27	37.10	26.43	3.09	0.47	0.47	0.05	1.53	29.59
	(2.15)	(9.10)	(6.69)	(2.50)	(0.68)	(0.69)	(0.14)	(1.24)	(5.15)
A	0.14	6.76	49.91	5.43	0.98	0.26	0.21	1.44	34.88
	(1.01)	(4.33)	(10.42)	(2.96)	(1.59)	(0.36)	(0.43)	(1.75)	(5.69)
BBB	0.00	1.37	18.74	31.41	1.85	0.48	0.14	2.57	43.44
	(0.00)	(3.51)	(5.43)	(4.29)	(1.97)	(0.39)	(0.56)	(3.82)	(3.65)
BB	0.00	0.51	4.93	16.06	11.00	3.29	0.00	8.60	55.63
	(0.00)	(1.37)	(6.35)	(6.91)	(6.11)	(3.09)	(0.00)	(13.93)	(16.31)
B	0.00	0.00	3.83	11.24	8.37	12.20	0.48	11.96	51.91
	(0.00)	(0.00)	(9.98)	(14.09)	(9.62)	(8.01)	(4.27)	(11.00)	(17.83)
CCC/C	0.00	0.00	1.30	0.00	9.09	0.00	0.00	35.06	54.55
	(0.00)	(0.00)	(11.56)	(0.00)	(15.78)	(0.00)	(0.00)	(31.66)	(29.96)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 43

Average multiyear global corporate transition matrices, 1981-2024 (%)**Financial institutions**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
One-year									
AAA	86.14	8.66	0.41	0.10	0.10	0.00	0.00	0.00	4.59
	(13.95)	(12.94)	(1.26)	(0.71)	(0.78)	(0.00)	(0.00)	(0.00)	(4.53)
AA	0.32	87.57	8.15	0.30	0.00	0.00	0.00	0.02	3.64
	(0.60)	(7.44)	(7.01)	(0.67)	(0.00)	(0.00)	(0.00)	(0.09)	(2.25)
A	0.03	1.72	89.33	3.91	0.16	0.04	0.01	0.05	4.75
	(0.19)	(1.92)	(5.58)	(3.46)	(0.58)	(0.13)	(0.06)	(0.21)	(2.87)
BBB	0.01	0.16	3.55	86.47	2.97	0.36	0.04	0.20	6.23
	(0.09)	(0.56)	(3.05)	(5.83)	(2.95)	(0.99)	(0.20)	(0.57)	(2.15)
BB	0.00	0.06	0.08	4.88	79.35	4.52	0.48	0.57	10.05
	(0.00)	(0.25)	(0.55)	(3.89)	(7.36)	(3.69)	(1.32)	(1.22)	(4.84)
B	0.00	0.00	0.03	0.33	6.24	76.98	3.48	2.44	10.51
	(0.00)	(0.00)	(0.45)	(0.79)	(4.17)	(7.32)	(3.79)	(3.72)	(4.06)
CCC/C	0.00	0.00	0.00	0.00	0.59	15.98	50.69	15.38	17.36
	(0.00)	(0.00)	(0.00)	(0.00)	(3.21)	(12.89)	(20.66)	(14.06)	(10.87)
Three-year									
AAA	63.90	20.62	1.23	0.72	0.10	0.00	0.00	0.00	13.44
	(19.38)	(18.99)	(2.95)	(2.06)	(0.63)	(0.00)	(0.00)	(0.00)	(7.77)
AA	0.79	67.59	19.35	1.50	0.15	0.06	0.00	0.08	10.48
	(0.91)	(13.31)	(10.38)	(1.95)	(0.49)	(0.34)	(0.00)	(0.23)	(5.12)
A	0.07	4.14	72.02	8.61	1.00	0.24	0.06	0.24	13.62
	(0.24)	(3.81)	(10.08)	(4.01)	(1.78)	(0.52)	(0.22)	(0.52)	(6.08)
BBB	0.03	0.41	8.73	66.16	5.20	0.86	0.21	0.88	17.52
	(0.18)	(1.02)	(6.07)	(9.94)	(3.81)	(1.18)	(0.64)	(1.56)	(4.96)
BB	0.00	0.09	0.36	11.28	51.25	7.57	0.67	2.31	26.48
	(0.00)	(0.40)	(1.01)	(6.05)	(11.40)	(4.19)	(1.52)	(3.56)	(7.09)
B	0.00	0.00	0.00	1.10	12.37	48.93	4.63	7.18	25.80
	(0.00)	(0.00)	(0.00)	(1.71)	(6.61)	(9.96)	(3.73)	(7.25)	(6.64)
CCC/C	0.00	0.00	0.00	0.00	0.66	26.05	13.47	23.40	36.42
	(0.00)	(0.00)	(0.00)	(0.00)	(3.39)	(16.50)	(17.49)	(15.36)	(15.43)
10-year									
AAA	21.24	33.75	7.15	2.42	0.00	0.00	0.00	0.00	35.44
	(13.57)	(20.33)	(5.64)	(4.68)	(0.00)	(0.00)	(0.00)	(0.00)	(11.87)
AA	0.74	31.66	30.11	5.05	0.17	0.12	0.00	0.47	31.68
	(0.88)	(11.83)	(7.43)	(3.37)	(0.46)	(0.28)	(0.00)	(1.63)	(7.52)

Table 43

Average multiyear global corporate transition matrices, 1981-2024 (%) (cont.)**Financial institutions**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
A	0.12	6.45	39.89	11.34	1.87	0.50	0.01	1.19	38.63
	(0.30)	(3.75)	(8.91)	(4.88)	(2.04)	(0.59)	(0.06)	(1.25)	(7.02)
BBB	0.08	1.07	10.74	31.40	5.19	1.44	0.42	3.59	46.07
	(0.30)	(2.24)	(4.16)	(9.79)	(2.79)	(0.72)	(0.76)	(2.62)	(6.82)
BB	0.07	0.00	2.37	13.68	14.57	6.86	0.22	6.60	55.64
	(0.46)	(0.00)	(2.51)	(5.06)	(8.50)	(3.41)	(0.45)	(6.57)	(8.09)
B	0.00	0.00	0.30	3.00	9.06	15.80	1.67	15.99	54.18
	(0.00)	(0.00)	(1.20)	(3.31)	(3.98)	(7.65)	(1.98)	(10.58)	(8.85)
CCC/C	0.00	0.00	0.00	1.50	4.49	8.38	5.39	29.04	51.20
	(0.00)	(0.00)	(0.00)	(2.68)	(6.78)	(9.10)	(9.12)	(14.98)	(12.68)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Table 44

Average multiyear global corporate transition matrices, 1981-2024 (%)**Nonfinancials**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
One-year									
AAA	87.22	8.22	0.84	0.00	0.14	0.00	0.00	0.00	3.58
	(8.70)	(7.68)	(1.69)	(0.00)	(0.47)	(0.00)	(0.00)	(0.00)	(4.11)
AA	0.51	87.32	7.53	0.63	0.08	0.11	0.00	0.00	3.81
	(0.75)	(5.69)	(3.92)	(0.99)	(0.30)	(0.35)	(0.00)	(0.00)	(2.49)
A	0.03	1.10	88.60	6.04	0.31	0.14	0.02	0.03	3.75
	(0.09)	(1.20)	(4.32)	(2.52)	(0.48)	(0.34)	(0.08)	(0.07)	(2.15)
BBB	0.00	0.04	2.64	87.94	3.39	0.42	0.09	0.12	5.37
	(0.03)	(0.11)	(1.65)	(4.43)	(1.84)	(0.67)	(0.21)	(0.24)	(1.71)
BB	0.01	0.01	0.09	4.21	78.96	6.70	0.49	0.57	8.97
	(0.06)	(0.08)	(0.23)	(1.80)	(4.88)	(3.42)	(0.58)	(0.80)	(2.22)
B	0.00	0.02	0.05	0.12	4.27	74.97	4.98	3.02	12.58
	(0.00)	(0.07)	(0.18)	(0.19)	(1.98)	(3.74)	(2.78)	(2.98)	(2.41)
CCC/C	0.00	0.00	0.08	0.14	0.33	12.91	44.57	27.28	14.68
	(0.00)	(0.00)	(0.39)	(0.59)	(0.72)	(7.57)	(8.09)	(11.74)	(4.39)
Three-year									
AAA	66.74	19.21	3.53	0.28	0.35	0.07	0.00	0.00	9.82
	(12.17)	(11.33)	(3.29)	(1.32)	(0.86)	(0.32)	(0.00)	(0.00)	(7.11)

Table 44

Average multiyear global corporate transition matrices, 1981-2024 (%) (cont.)**Nonfinancials**

From/to	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
AA	1.15	67.04	17.99	2.31	0.52	0.27	0.01	0.03	10.68
	(1.09)	(10.01)	(5.72)	(1.99)	(0.77)	(0.58)	(0.08)	(0.10)	(4.82)
A	0.05	2.58	70.19	14.24	1.18	0.51	0.07	0.11	11.08
	(0.10)	(2.40)	(7.46)	(3.65)	(1.14)	(0.75)	(0.14)	(0.18)	(3.95)
BBB	0.01	0.12	6.55	69.32	6.96	1.52	0.22	0.60	14.71
	(0.05)	(0.26)	(3.12)	(8.47)	(2.36)	(1.43)	(0.33)	(0.95)	(3.56)
BB	0.01	0.03	0.33	9.61	50.65	11.62	1.18	3.39	23.19
	(0.05)	(0.12)	(0.61)	(3.40)	(8.00)	(3.17)	(0.81)	(3.35)	(3.75)
B	0.00	0.02	0.13	0.50	8.39	42.44	5.54	11.08	31.89
	(0.04)	(0.10)	(0.40)	(0.65)	(3.42)	(4.79)	(2.11)	(6.77)	(4.85)
CCC/C	0.00	0.00	0.07	0.40	1.34	15.45	10.52	43.13	29.09
	(0.00)	(0.00)	(0.32)	(0.99)	(1.50)	(6.45)	(5.52)	(12.34)	(7.52)
10-year									
AAA	29.90	29.75	10.38	3.87	0.22	0.00	0.00	0.22	25.66
	(9.72)	(11.83)	(5.25)	(3.65)	(0.60)	(0.00)	(0.00)	(0.54)	(9.84)
AA	1.33	26.43	30.17	8.78	1.47	0.43	0.02	0.32	31.04
	(1.07)	(8.54)	(4.03)	(4.02)	(1.19)	(0.52)	(0.10)	(0.52)	(5.94)
A	0.07	3.57	37.05	23.11	3.02	1.04	0.10	1.08	30.95
	(0.14)	(2.24)	(6.78)	(3.65)	(1.16)	(0.87)	(0.17)	(0.93)	(5.10)
BBB	0.01	0.27	10.43	39.53	7.40	2.29	0.19	3.27	36.61
	(0.06)	(0.29)	(3.48)	(8.17)	(1.30)	(1.42)	(0.20)	(2.42)	(4.89)
BB	0.00	0.06	1.18	11.07	18.87	8.24	0.78	13.04	46.76
	(0.00)	(0.13)	(0.94)	(2.92)	(5.56)	(2.13)	(0.39)	(6.52)	(2.93)
B	0.00	0.02	0.20	1.79	6.56	9.69	1.04	25.40	55.30
	(0.00)	(0.06)	(0.52)	(1.39)	(1.68)	(2.52)	(0.52)	(8.31)	(6.46)
CCC/C	0.00	0.00	0.08	0.67	3.16	3.16	0.59	52.94	39.39
	(0.00)	(0.00)	(0.32)	(0.90)	(2.51)	(2.39)	(0.77)	(11.11)	(9.41)

Note: Numbers in parentheses are weighted standard deviations, weighted by the issuer base. NR--Not rated. Sources: S&P Global Market Intelligence's CreditPro and S&P Global Ratings Credit Research & Insights.

Appendix II: Gini Methodology

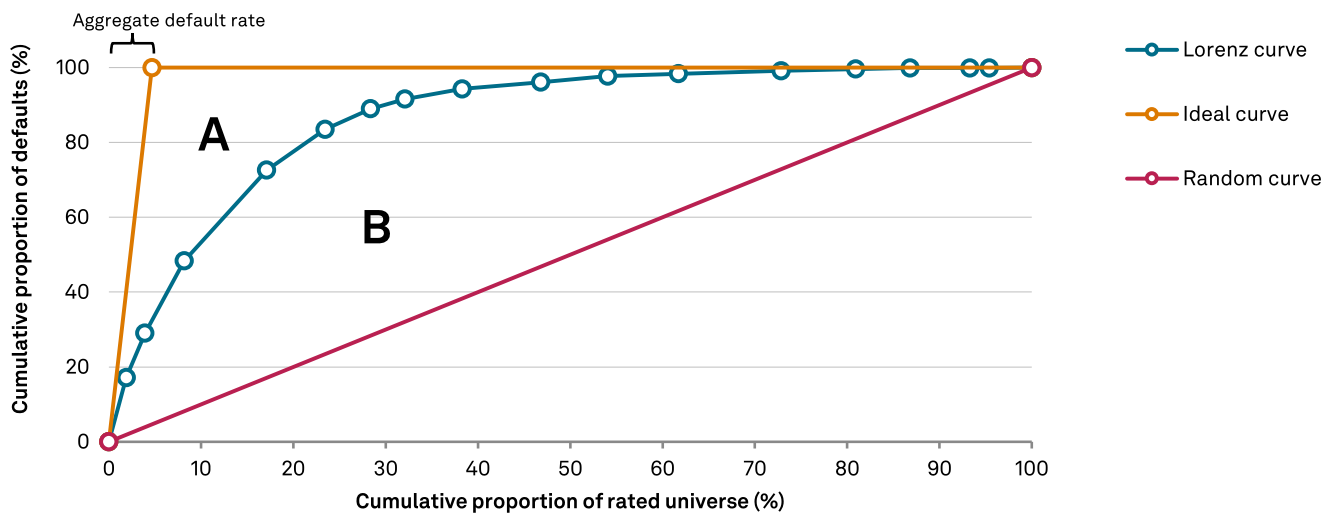
We utilize the Lorenz curve, a graphical representation of the proportionality of a distribution, as one measure of ratings performance, and we summarize this via the Gini coefficient. For this study, the Lorenz curve is plotted with the x-axis showing the cumulative share of issuers, arranged by rating, while the y-axis represents the cumulative share of defaulters, also arranged by rating. For both axes of the Lorenz curve, the observations are ordered from the low end of the ratings scale ('CCC'/'C') to the high end ('AAA').

As an example, if 'CCC'/'C' rated entities made up 10% of the total population of issuers at the start of the time frame examined (x-axis) and 50% of the defaulters (y-axis), then the coordinate (10, 50) would be the first point on the curve. If S&P Global Ratings' corporate ratings only randomly approximated default risk, the Lorenz curve would fall along the diagonal. Its Gini coefficient--which is a summary statistic of the Lorenz curve--would thus be zero. If corporate ratings were perfectly rank ordered so that all defaults occurred only among the lowest-rated entities, the curve would capture all of the area above the diagonal on the graph (the ideal curve), and its Gini coefficient would be 1 (see chart 31).

The procedure for calculating the Gini coefficients is illustrated in chart 31: Area B is bounded by the random curve and the Lorenz curve, while area A is bounded by the Lorenz curve and the ideal curve. The Gini coefficient is defined as area B divided by the total of area A plus area B. In other words, the Gini coefficient captures the extent to which actual ratings accuracy diverges from the random scenario and aspires to the ideal scenario.

Chart 31

Sample Lorenz curve



Source: S&P Global Ratings Credit Research & Insights.
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Related Research

- S&P Global Ratings Definitions, Dec. 2, 2024
- Default, Transition, and Recovery: U.S. Recovery Study: Loan Recoveries Persist Below Their Trend, Dec. 15, 2023

The use of the term "methodology" in this article refers to data aggregation and calculation methods used in conducting the research. It does not relate to S&P Global Ratings' methodologies, which are publicly available criteria used to determine credit ratings.

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