

Default, Transition, and Recovery:

2018 Annual Global Leveraged Loan CLO Default And Rating Transition Study

June 19, 2019

Key Takeaways

- Just four rated CLO tranches defaulted in 2018, and all were from pre-2008 transactions that were initially rated speculative grade ('BB+' or lower).
- No investment-grade CLOs (those rated 'BBB-' or higher) were downgraded during the year.
- CLO ratings were exceptionally stable in 2018: Less than 4% changed over the year.

In 2018, the ratings on global leveraged loan collateralized loan obligations (CLOs) generally moved higher. This continued the trend of the previous seven years, though in 2018 it was less pronounced. During the year there were more upgrades than downgrades and only four defaults.

This positive CLO credit performance echoed that of speculative-grade U.S. and European corporates. Globally, the CLO default rate fell to 0.12% in 2018 from 0.16% in 2017, and similarly the corporate default rate fell to 1.0% from 1.2% (see Chart 1).

GLOBAL FIXED INCOME RESEARCH

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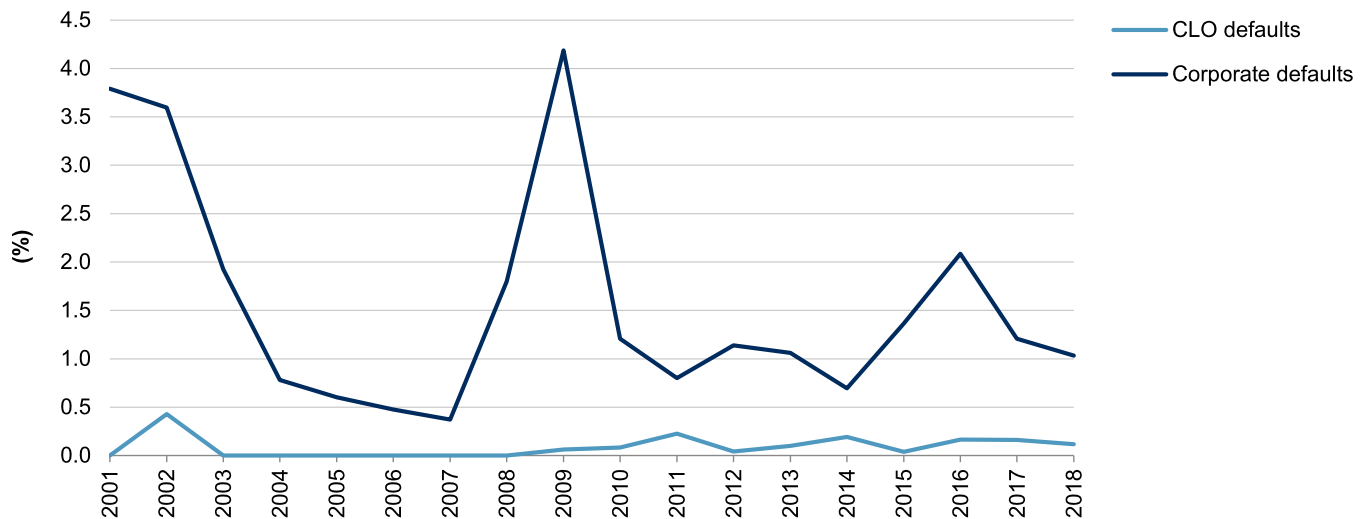
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Chart 1

Annual Global Default Rates For CLOs And Corporate Issuers



Sources: S&P Global Fixed Income Research and S&P Global Market Intelligence's CreditPro®.
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2018 Summary Findings

Defaults: The annual default rate declines

- Including the four CLO tranche defaults in 2018, the overall global CLO default rate fell to 0.12% in 2018 from 0.16% in 2017, though it's slightly above the long-term average of 0.09%.
- Each of the four defaulting CLO tranches in 2018 was rated in the 'CCC' or 'CC' categories as of the beginning of the year.
- Initially, these four tranches were each rated speculative-grade, and among the defaulters, 'BB' was the highest rating at origination.
- All of the four defaults in 2018 were European transactions.
- Two of the defaults occurred following a liquidation of the CLO, one followed a missed interest payment, and one was due to insufficient capital.

Rating transitions: The upgrade rate moderated, but the downgrade rate fell even lower in 2018

- CLO ratings were exceptionally stable in 2018: Of the 3,423 global CLO ratings outstanding at the start of 2018, 96.5% were unchanged during the year.

- Among the ratings that were changed, upgrades exceeded downgrades by more than 4 to 1.
- We raised 2.8% of ratings in 2018, down from 8.2% in 2017, giving 2018 the lowest upgrade rate in the CLO sector since 2009. Following the number of CLO resets done in recent years, fewer CLOs are now hitting their amortization phase, when upgrades are most likely to occur.
- The 2018 downgrade rate of 0.7% was down slightly from 0.9% in 2017 and much lower than the long-term one-year average downgrade rate of 7.9%.
- While the long-term one-year average downgrade rate is 7.9%, the median annual downgrade rate is just 0.8%. The average downgrade rate is boosted by the very high proportion of CLO tranche ratings that were lowered in late 2009 and early 2010 due to performance and the implementation of new CLO criteria.
- The average magnitude of a rating action declined to +0.05 notches in 2018 from +0.17 notches in 2017.

Region and vintage breakdown: The upgrade rate was highest in pre-crisis transactions, and all defaults were from Europe

- So-called CLO 1.0 transactions (those originated before 2010) had a higher upgrade rate (7.9%) than CLO 2.0 transactions (2.3%), though CLO 1.0 ratings accounted for only 8.5% of the overall universe at the beginning of 2018.
- European CLOs had a default rate of 0.5% in 2018, which is above the long-term average of 0.14%.
- With no defaults in 2018, the U.S.-based CLO default rate was below its long-term average of 0.08%

Global Economic And Credit Conditions Were Favorable For CLOs In 2018

Favorable economic and financing conditions continued to support the credit quality of CLOs and corporate issuers in 2018. The U.S. and most of Europe continued to experience steady, positive economic growth in 2018. This growth in the U.S. led the Federal Reserve to continue to tighten monetary policy as the European Central Bank continued to pursue a program of monetary stimulus that it expected to begin winding-down by the end of the year. Rising interest rates in the U.S. in recent years have been whetting investors' appetites for floating-rate debt, and robust leveraged loan issuance has been brought to market to sate this demand. Much of this new loan issuance has funded acquisition and LBO activity. With strong demand, financing conditions remained largely accommodative for speculative-grade companies, and investors continued to accept few covenant protections from new loans. These so-called cov-lite loans accounted for more than 70% of broadly syndicated term loan issuance in 2018 globally.

These accommodative financing conditions bolstered the market for new CLO issuance. Global new issue CLO issuance climbed by 14% to \$161 billion in 2018. For funding costs, 'AAA' tranche spreads in the U.S. tightened during the first half of the year, but this tightening was offset as spreads widened in the second half. 'AAA' U.S. CLO spreads closed out 2018 at 122 basis points (bps), back at the level where they began the year. Furthermore, new CLO deals got a further boost in April 2018 when the U.S. Court of Appeals ruled that risk-retention rules set forth in the Dodd-Frank Act did not apply to managers of open-market CLO transactions (where the manager

was not involved in the origination of the loans in the collateral pool). Previously, CLO managers had been required to hold a 5% slice of any CLOs they issued, which they addressed through a variety of mechanisms. The appeals court ruling didn't affect risk retention for CLOs where the manager is the originator of the loans within the CLO, as is the case with many middle-market CLO transactions.

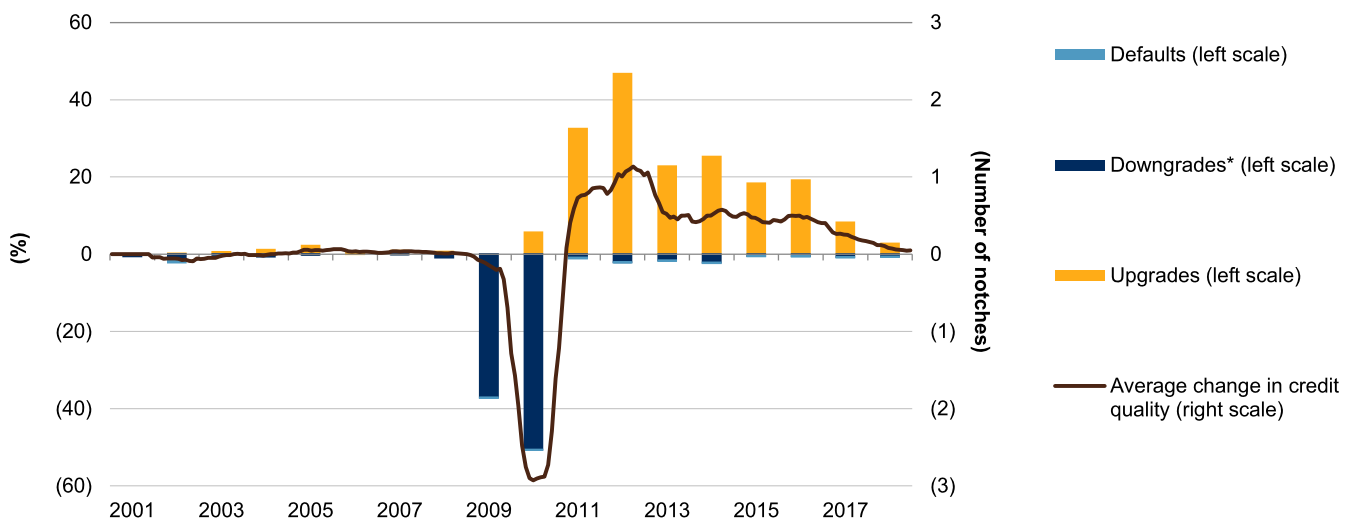
Upgrades Moderated But Continued To Outpace Downgrades In 2018

The trend of net upward rating movements in the global leveraged loan CLO sector has now persisted for several years. Since 2011, the downgrade rate has remained below 2.5%, while the annual upgrade rate has often been in the double-digit percentages (see Chart 2). The broad trend of positive ratings performance over this timeframe has been similar across both the U.S. and European markets.

Credit stability and accommodative financing conditions among the corporate sectors have helped to provide a solid base for CLO rating performance in 2018. Speculative-grade companies, the loans of which constitute much of the collateral for these CLOs, have shown a high level of credit stability in recent years. In 2018, corporate upgrades outnumbered downgrades, and defaults fell to a four-year low.

Chart 2

Global CLO Transition Rates And Average Change In Credit Quality



*Excluding defaults. Securities with ratings that migrated to 'NR' over the period are classified based on their rating prior to 'NR'. Negative numbers signify downgrades. Source: S&P Global Fixed Income Research. Copyright © 2019 by Standard & Poor's Financial Services LLC. All rights reserved.

The pace of CLO upgrades has slowed since 2012. That year, we raised large numbers of CLO ratings for two reasons:

- Improved credit quality led us to raise many CLO 1.0 ratings that we'd lowered during the global financial crisis.

- Many transactions entered their amortization phases and reduced the balance of their senior notes outstanding.

While the rate of upgrades has since slowed, it remained above 10% annually through 2016. Then, the rise of CLO resets led to fewer CLO transactions entering their amortization phase, when senior note balances have decreased and upgrades are most likely.

By most metrics, the overall performance of global CLO securities that we rate was positive in 2018, though less so than in recent years. During the year, we raised 2.8% of our ratings on global CLO securities that were outstanding at the beginning of the year. This was down from 8.2% in the previous year, though the number of upgrades still exceeded the number of downgrades by a significant margin--a trend that has continued since 2011.

The 12-month trailing average change in credit quality (see definition in Appendix I) for global CLOs was +0.05 notches at the end of 2018. This measure has been positive since 2011, indicating that, on average, CLO ratings have been drifting higher for many years.

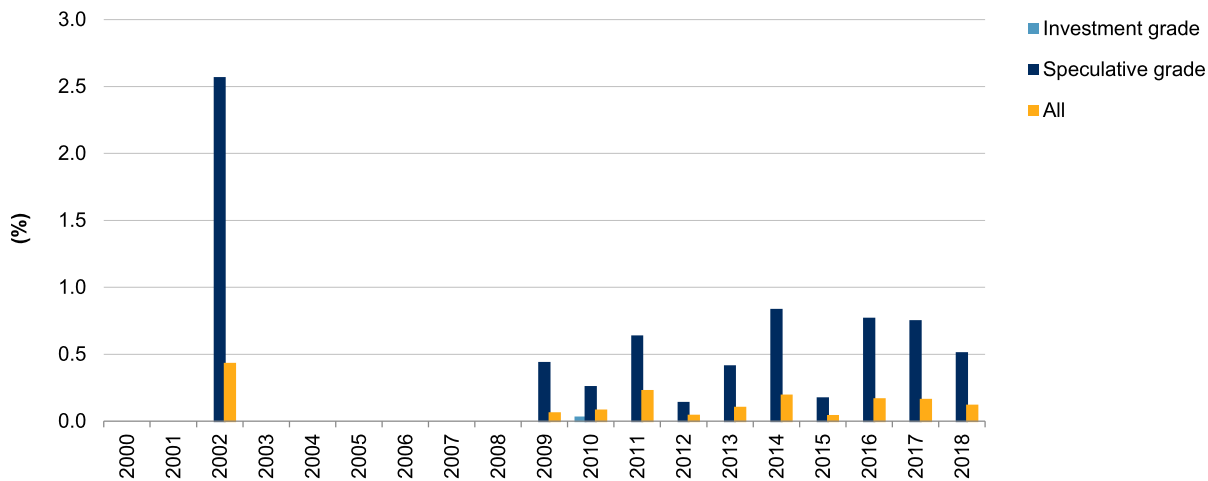
The default rate of 0.12% in 2018 was down from the previous year but still slightly above the one-year weighted-average default rate of 0.09%.

However, the default rate remains low compared with that of some other structured finance sectors, such as residential mortgage-backed securities. Annual CLO default rates have been low and generally steady throughout the sector's history, with no annual default rate so far exceeding 0.5% (see Chart 3). There were no defaults on investment-grade CLO ratings in 2018, and no U.S or European CLO original 'AAA' rated tranche has ever defaulted. The default rate on speculative-grade CLO tranches was 0.51%, though this was equivalent to only four defaults among 787 speculative-grade ratings outstanding at the beginning of the year.

Two of the defaults in 2018 were from combination (combo) notes. In this study, we include the ratings on these notes separately from--and in addition to--any ratings on their underlying components.

Chart 3

Global CLO Default Rates



Source: S&P Global Fixed Income Research.

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CLO credit performance in 2018 was broadly similar between the U.S. and Europe. U.S. CLOs had a higher upgrade rate of 3.0% and a downgrade rate of 0.7%, with ratings rising by an average of 0.06 notches over the year. European transactions had a lower upgrade rate of 2.2% and a slightly higher downgrade rate of only 0.9%, with an average increase in credit quality of 0.02 notches. In both cases, downgrade rates were well below their one-year weighted-averages.

In 2018, CLO 2.0s Led Downgrades, And CLO 1.0s Led Defaults

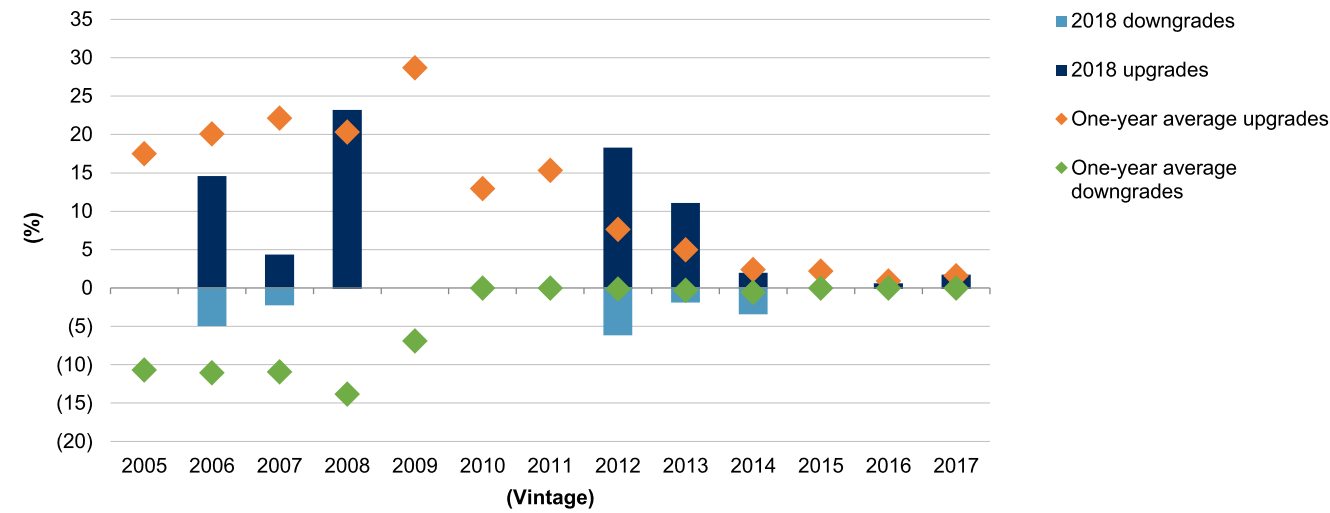
Credit performance continues to differ by the year of issuance--or vintage--of CLO securities. In 2018, most downgrades were from the 2012-2014 vintages, while all of the CLO tranche defaults came from pre-crisis vintages.

The fundamental credit characteristics and economic environment of a transaction's vintage can influence its subsequent credit behavior. Segmenting global CLO credit performance by transaction vintage reveals that the upgrade rate in 2018 was generally higher for the 2013 and earlier vintages, mostly due to transactions deleveraging (see Chart 4). We also segment CLO transactions into so-called 1.0 and 2.0 generations, generally referring to transactions originated before and after the 2008-2009 financial crisis, respectively. For these purposes, we consider CLO 2.0 transactions to be those issued since the beginning of 2010, and we designate those issued in 2009 or earlier as CLO 1.0 transactions. Aggregating across vintages into the 1.0 and 2.0 generations, we note that there had not been any CLO 2.0 tranche defaults as of year-end 2018. The upgrade rate for 1.0 transactions was 7.9% compared with 2.3% for 2.0 transactions.

While CLO 2.0s had higher downgrade rates in 2018, the few CLO defaults in the year were in 2004-2007 vintage transactions. Higher default rates in earlier vintages are partly due to survival bias, in our view. Those securities from earlier vintage transactions that performed well will increasingly have paid off by now, exiting the pool of ratings considered in the 2018 performance statistics. Those that remain in the pool are therefore increasingly those that have shown weaker performance. In addition, the underlying collateral pools in some earlier vintage transactions now contain only a handful of loans, increasing idiosyncratic risk.

Chart 4

Global CLO Transition Rates By Vintage
2018 versus one-year average

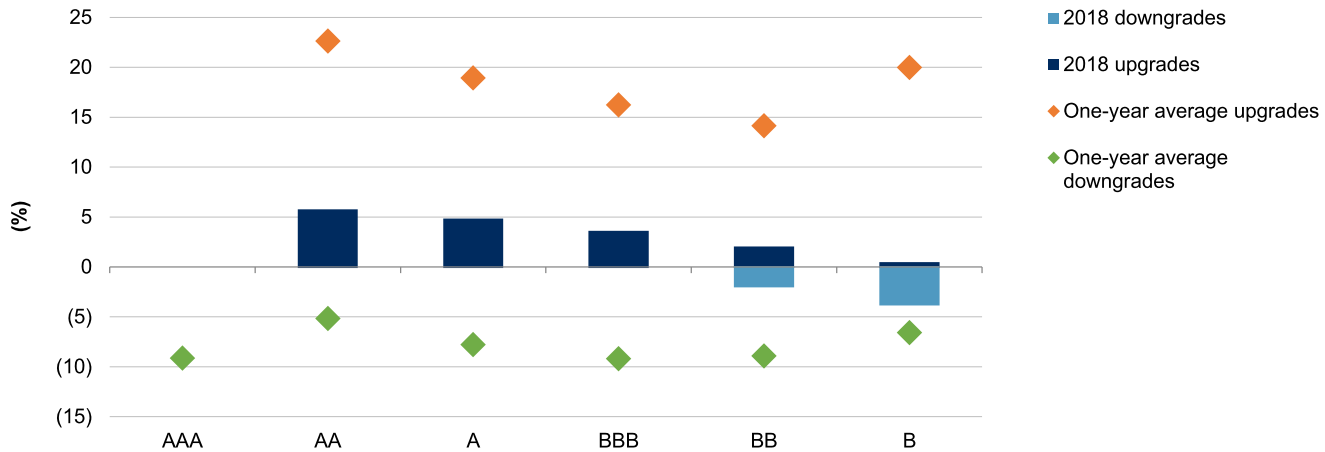


Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'.
Negative numbers signify downgrades. Source: S&P Global Fixed Income Research.
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Across global CLOs, downgrade rates in 2018 were somewhat differentiated by rating at the beginning of the year, though the absolute numbers of downgrades were low. Broadly speaking, downgrade rates were higher for lower CLO rating categories, with a downgrade rate of 2.0% for securities rated in the 'BB' category at the beginning of the year compared with 3.8% for those in the 'B' category, for example (see Chart 5). There were no downgrades from the 'BBB' and higher rating categories in 2018.

Chart 5

Global CLO Transition Rates By Rating Category 2018 versus one-year average



Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. Negative numbers signify downgrades. Source: S&P Global Fixed Income Research. Copyright © 2019 by Standard & Poor's Financial Services LLC. All rights reserved.

Table 1 shows a summary of 2018 credit performance for global CLOs segmented in various ways and compared with the 1997-2018 one-year weighted-average statistics.

Table 1

Global CLO Transition And Default Summary

2018 versus one-year average

	--2018--					--One-year average--				
	Ratings (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)	Defaults (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)
Overall	3,423	96.5	2.8	0.7	0.12	4	77.7	14.5	7.9	0.09
Region										
U.S.	2,603	96.4	3.0	0.7	0.0	0	79.5	13.7	6.8	0.1
Europe	820	97.0	2.2	0.9	0.5	4	71.9	16.9	11.2	0.1
Generation										
1.0	290	89.0	7.9	3.1	1.4	4	72.2	17.6	10.2	0.1
2.0	3,133	97.2	2.3	0.5	0.0	0	95.4	4.4	0.2	0.0
Vintage										
Pre-2005	1	0.0	0.0	100.0	100.0	1	82.9	9.2	7.9	0.3
2005	4	100.0	0.0	0.0	0.0	0	71.8	17.5	10.7	0.0
2006	83	80.7	14.5	4.8	2.4	2	68.9	20.1	11.1	0.1
2007	189	93.7	4.2	2.1	0.5	1	66.9	22.1	10.9	0.0
2008	13	76.9	23.1	0.0	0.0	0	65.8	20.3	13.8	0.3

Table 1

Global CLO Transition And Default Summary (cont.)

2018 versus one-year average

	--2018--						--One-year average--			
	Ratings (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)	Defaults (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)
2009	0	N/A	N/A	N/A	N/A	N/A	64.4	28.7	6.9	0.0
2010	0	N/A	N/A	N/A	N/A	N/A	87.0	13.0	0.0	0.0
2011	0	N/A	N/A	N/A	N/A	N/A	84.6	15.4	0.0	0.0
2012	33	75.8	18.2	6.1	0.0	0	92.2	7.7	0.1	0.0
2013	283	87.3	11.0	1.8	0.0	0	94.7	5.0	0.3	0.0
2014	272	94.9	1.8	3.3	0.0	0	97.0	2.4	0.6	0.0
2015	215	100.0	0.0	0.0	0.0	0	97.8	2.2	0.0	0.0
2016	648	99.5	0.5	0.0	0.0	0	99.1	0.9	0.0	0.0
2017	1,682	98.4	1.6	0.0	0.0	0	98.4	1.6	0.0	0.0

Rating category

AAA	893	100.0	N/A	0.0	0.0	0	90.9	N/A	9.1	0.0
AA	686	94.3	5.7	0.0	0.0	0	72.2	22.6	5.2	0.0
A	546	95.2	4.8	0.0	0.0	0	73.3	18.9	7.8	0.0
BBB	511	96.5	3.5	0.0	0.0	0	74.6	16.2	9.2	0.0
BB	510	96.1	2.0	2.0	0.0	0	76.9	14.1	8.9	0.0
B	265	95.8	0.4	3.8	0.0	0	73.4	20.0	6.6	0.1
CCC	10	50.0	10.0	40.0	30.0	3	59.9	34.9	5.2	1.2
CC	2	50.0	0.0	50.0	50.0	1	65.7	5.1	29.3	29.3

Rating grade

Investment-grade	2,636	96.9	3.1	0.0	0.0	0	78.8	13.3	7.8	0.0
Speculative-grade	787	95.3	1.5	3.2	0.5	4	73.5	18.5	8.0	0.4

*Including defaults. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. N/A--Not applicable. Source: S&P Global Fixed Income Research.

CLO Credit Performance Has Shown Greater Variability Than Corporates' Over Time

Corporate credit performance may broadly affect the performance of CLOs. A large majority of CLOs are backed by pools of broadly syndicated loans to a diversified mix of companies, most of which are rated speculative-grade (in the U.S., middle market loan CLOs, which are collateralized by loans to smaller, unrated companies, constitute about 10% of CLOs outstanding). However, the various metrics that we use to describe credit performance will likely differ between corporates and CLOs.

From 2001 to 2018, CLOs exhibited lower average annual downgrade and default rates than corporates, as well as higher average annual upgrade rates. However, based on these measures,

CLO credit performance has varied more widely than corporates from year to year, reflected in the lower minimum transition rates, with higher maximums and standard deviations (see Chart 6).

Chart 6

Comparison Of CLO And Corporate Annual Rating Changes

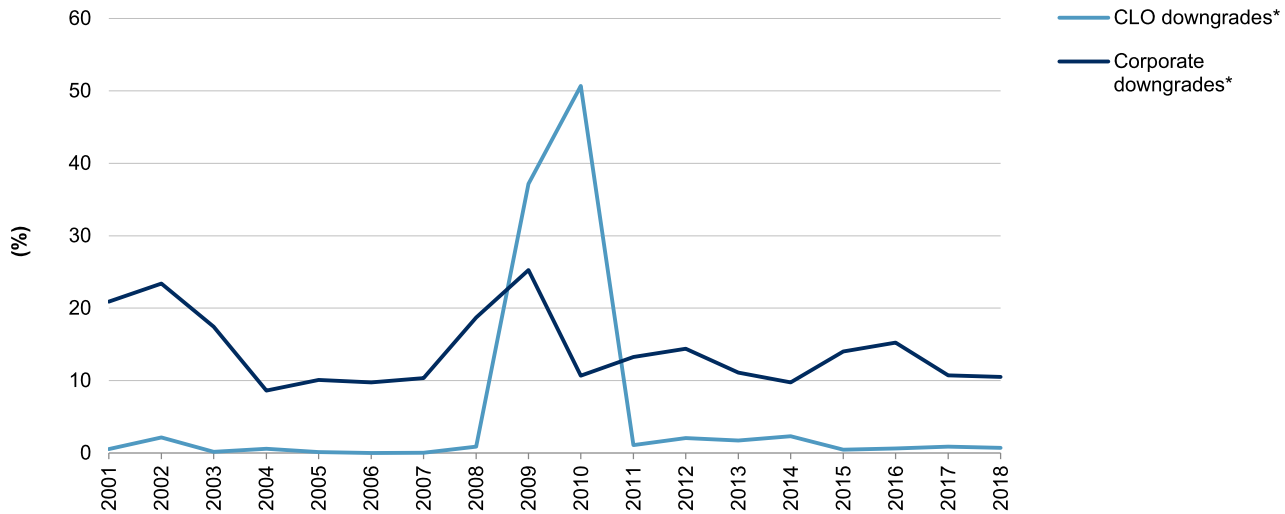


Measures are based on the simple average of annual rating changes (2001 – 2018). Downgrades include defaults. Ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'.
Sources: S&P Global Fixed Income Research and S&P Global Market Intelligence's CreditPro®.
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For example, the global corporate downgrade rate peaked at 25% in 2009 in the wake of the financial crisis. But this was still much lower than the 51% downgrade rate for CLOs in 2010 (see Chart 7). These CLO downgrades in late 2009 and the first half of 2010 resulted from both deteriorating collateral performance following the financial crisis and from criteria changes. In September 2009, S&P Global Ratings published revised CLO methodology that required increased enhancement to get to a given rating level, and this criteria change contributed to many of the downgrades of the 'AA' and 'AAA' tranches during this period.

Chart 7

Annual Global Downgrade Rates For CLOs And Corporate Issuers

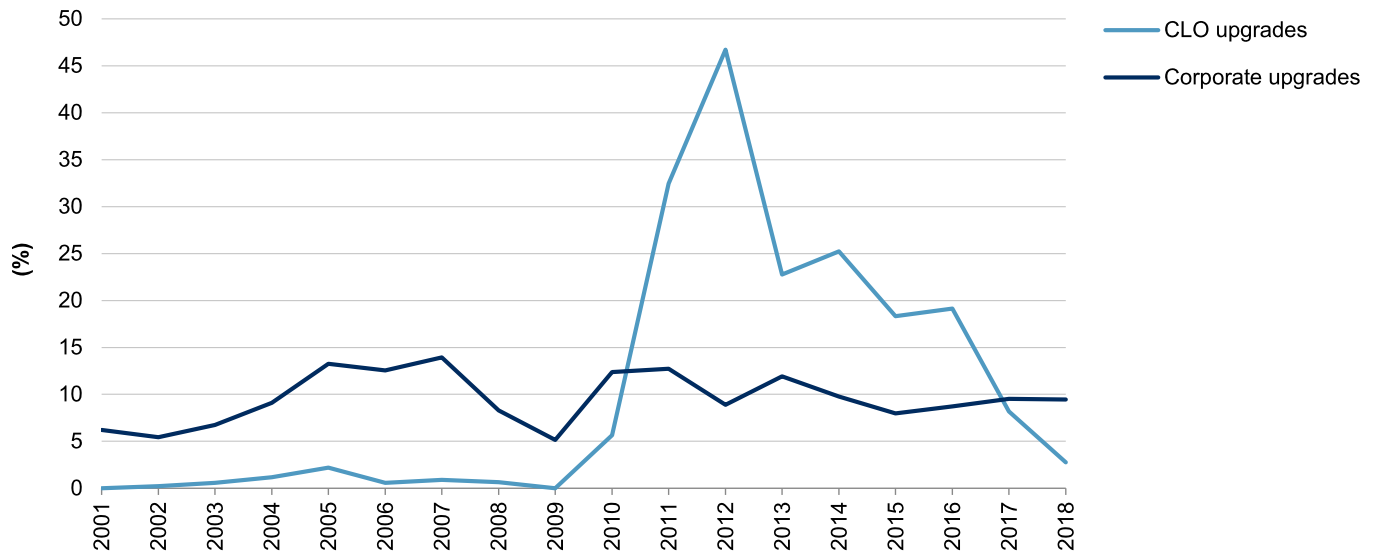


Downgrades include defaults. Ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. Sources: S&P Global Fixed Income Research and S&P Global Market Intelligence's CreditPro®. Copyright © 2019 by Standard & Poor's Financial Services LLC. All rights reserved.

The global corporate upgrade rate reached a peak of 14% in 2007, but CLOs had even higher, double-digit upgrade rates every year from 2011 to 2016, peaking at 47% in 2012. This was largely due to structural deleveraging among CLO transactions that had exited their reinvestment periods, supported by a backdrop of stable underlying corporate credit performance (see Chart 8).

Chart 8

Annual Global Upgrade Rates For CLOs And Corporate Issuers



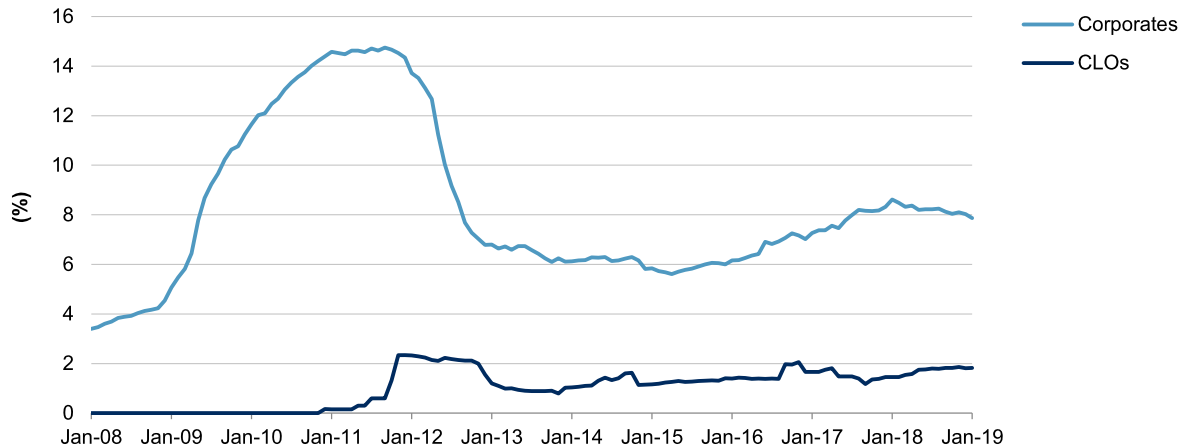
Ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. Sources: S&P Global Fixed Income Research and S&P Global Market Intelligence's CreditPro®.

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Defaults among speculative-grade corporates have so far been much more common than for speculative-grade CLO tranches. Following the last financial crisis, the three-year default rate for global speculative-grade corporates that we rate peaked at just under 15%. By contrast, the equivalent measure for global speculative-grade CLO tranches reached a high of only 2.3% (see Chart 9).

Chart 9

Global Speculative-Grade Three-Year Trailing Default Rates CLOs versus corporates



Source: S&P Global Fixed Income Research.

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The pool of global corporates that we rate is diverse in terms of sector and country-related risks. For CLOs, while the underlying collateral pool in any given transaction is also diverse, the mix of country, sector, and even individual obligor exposures compared across different CLOs' collateral pools can have significant overlap in names, especially for European CLOs. This makes the joint default or joint survival of CLO tranches more likely, which could help explain the very low default rates to date: If even the peak losses experienced in collateral pools so far were insufficient to cause a tranche default in one transaction, then they would also likely be insufficient to do so in most other transactions. On the other hand, in a more substantial downturn, a large uptick in defaults among corporate obligors favored by CLO managers could have a relatively widespread effect on our CLO ratings, leading to higher default rates.

CLO Ratings Have Differentiated Default Rates Over Time

Looking back further, global CLOs have historically exhibited strong credit performance, with few defaults. At the end of 2018, we had assigned nearly 13,400 ratings on CLO securities. The majority of these tranches have since been paid in full, and we withdrew the ratings. Fewer than 0.5% of the tranches have had ratings lowered to 'D' (see Table 2). (Further details of CLO tranches with ratings that we lowered to 'D' are listed in Table 8 of Appendix II, and tranches with ratings of 'CC' as of end-2018 are shown in Table 9.)

Table 2

Global CLO Lifetime Transition And Default Summary

1996-2018

	Ratings (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)	Defaults (number)	Withdrawals (%)
Overall	13,397	70.1	22.4	7.5	0.4	58	72.3
Region							
U.S.	10,894	72.1	22.8	5.1	0.3	38	72.4
Europe	2,503	61.0	21.0	18.1	0.8	20	72.0
Generation							
1.0	5,765	41.3	41.7	17.0	1.0	58	98.2
2.0	7,632	91.8	7.9	0.3	0.0	0	52.7
Vintage							
Pre-2005	1,669	56.9	24.7	18.4	2.3	38	97.7
2005	744	36.2	47.7	16.1	0.4	3	99.6
2006	1,505	35.7	48.8	15.5	0.7	10	97.7
2007	1,521	33.9	51.6	14.5	0.1	2	99.0
2008	298	34.2	33.9	31.9	1.7	5	96.3
2009	28	21.4	64.3	14.3	0.0	0	100.0
2010	33	60.6	39.4	0.0	0.0	0	100.0
2011	154	51.9	48.1	0.0	0.0	0	100.0
2012	629	74.9	24.8	0.3	0.0	0	98.4
2013	1,105	79.5	19.6	0.9	0.0	0	94.9
2014	887	91.1	7.3	1.6	0.0	0	88.8
2015	586	94.9	5.1	0.0	0.0	0	89.1
2016	767	97.9	2.1	0.0	0.0	0	65.3
2017	1,690	98.4	1.6	0.0	0.0	0	21.1
2018	1,781	99.8	0.2	0.0	0.0	0	0.1
Rating category							
AAA	4,043	94.0	N/A	6.0	0.0	0	77.0
AA	2,472	60.6	36.6	2.8	0.0	1	71.1
A	2,374	56.1	40.2	3.7	0.2	5	73.6
BBB	2,235	54.3	33.2	12.4	0.5	12	73.6
BB	1,815	62.0	21.4	16.6	2.0	36	67.2
B	458	90.6	3.7	5.7	0.9	4	44.8
CCC	0	N/A	N/A	N/A	N/A	N/A	N/A
CC	0	N/A	N/A	N/A	N/A	N/A	N/A
Rating grade							
Investment-grade	11,124	70.5	23.4	6.1	0.2	18	74.3

Table 2

Global CLO Lifetime Transition And Default Summary (cont.)

1996-2018

	Ratings (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)	Defaults (number)	Withdrawals (%)
Speculative-grade	2,273	67.8	17.8	14.4	1.8	40	62.7

*Including defaults. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR' when determining stable, upgrade, downgrade, and default rates. N/A--Not applicable. Source: S&P Global Fixed Income Research.

To explore the extent to which our ratings have successfully rank-ordered securities' creditworthiness over time, we can calculate cumulative default rates by rating category for various time horizons as we do in our corporate default and transition studies. This approach constructs average multiyear cumulative default rates by first aggregating across static pools the period-to-period one-year marginal default rates that are conditional on the securities' survival (i.e., non-default) in the prior one-year period (see Appendix I for more details). We note that this approach differs from the calculations we use in constructing the weighted-average multiyear default and transition rates included elsewhere in this study, where default rates are not conditional on survival.

The cumulative default rates (conditional on survival) based on our full annual data history--from the beginning of 1997 to the end of 2018--show that lower ratings have generally been associated with higher default rates and vice versa (see Table 3). In other words, ratings appear to have successfully rank-ordered creditworthiness over each time horizon.

Table 3

Global CLO Cumulative Default Rates, Conditional On Survival (1997 - 2018) (%)

	--Time horizon (years)--									
	1	2	3	4	5	6	7	8	9	10
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	0.00	0.01	0.02	0.03	0.04	0.05	0.07	0.09	0.09	0.09
A	0.00	0.01	0.02	0.03	0.05	0.05	0.05	0.05	0.05	0.05
BBB	0.01	0.01	0.02	0.07	0.11	0.20	0.33	0.48	0.68	0.89
BB	0.02	0.13	0.24	0.33	0.48	0.67	1.00	1.54	2.29	3.37
B	0.07	0.17	0.33	0.51	0.84	1.31	1.49	1.88	3.08	6.31
CCC	1.18	2.57	4.13	5.84	7.45	8.60	9.79	10.78	12.28	12.28
CC	29.29	43.64	50.95	53.18	54.29	54.29	54.29	54.29	54.29	54.29
Investment grade	0.00	0.01	0.01	0.03	0.04	0.07	0.10	0.14	0.18	0.23
Speculative grade	0.42	0.84	1.26	1.68	2.15	2.58	3.05	3.65	4.48	5.64
Overall	0.09	0.19	0.28	0.39	0.50	0.61	0.74	0.88	1.05	1.26

Source: S&P Global Fixed Income Research.

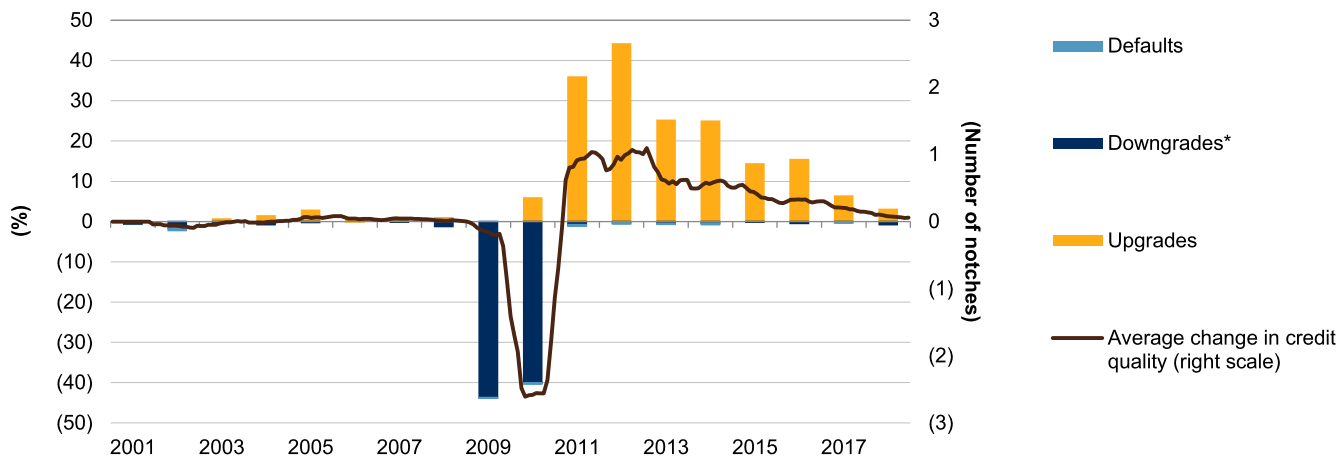
Regions In Detail

U.S. CLOs

Between 2011 and 2016, the upgrade rate in the U.S. CLO sector consistently exceeded 10% per year. Upgrades have slowed in recent years, however, as CLO resets become more common and fewer transactions enter their amortization period. In 2018, we raised 3.0% of our U.S. CLO ratings that were outstanding at the beginning of the year. This figure was down from 6.3% the previous year and a high of 44.1% in 2012 (see Chart 10). At the same time, the U.S. CLO downgrade rate has generally been low in most years and was only 0.7% in 2018. Widespread downgrades in 2009 and 2010 were the result of changes in our rating methodology and also performance deterioration, especially for mezzanine and junior CLO tranche ratings.

Chart 10

U.S. CLO Transition Rates And Average Change In Credit Quality



*Excluding defaults. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. Negative numbers signify downgrades. Source: S&P Global Fixed Income Research. Copyright © 2019 by Standard & Poor's Financial Services LLC. All rights reserved.

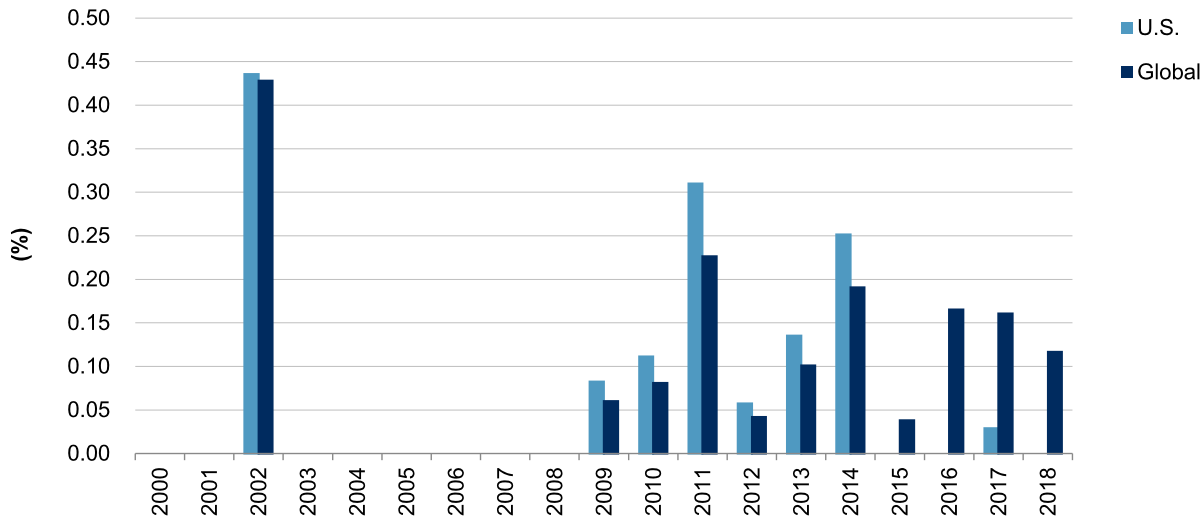
Incorporating both the magnitude and frequency of rating actions, the overall average change in credit quality for U.S. CLOs was +0.06 notches for the year. This continued the longstanding trend of net positive rating migration in the sector but also the trend of fewer upgrades over the past several years due to fewer CLOs reaching their amortization phase.

In general, credit and financing conditions have been favorable in recent years for the corporates that back U.S. CLOs. Despite a few periods of elevated market volatility in 2018, more U.S. companies were upgraded than were downgraded during the year, and the U.S. corporate speculative-grade default rate fell to 2.4% in 2018 from 3.1% in 2017.

There have historically been very few defaults among U.S. CLOs, with the annual default rate never exceeding 0.5% (see Chart 11). There were no further defaults in the sector in 2018.

Chart 11

U.S. CLO Default Rates



Source: S&P Global Fixed Income Research.

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Upgrade rates were generally higher across older transaction vintages that had a significant number of ratings outstanding at the beginning of 2018. For the 2014–2017 vintages, lower transaction seasoning limited the scope for upgrades, leading to upgrade rates no higher than 2% (see Table 4).

Table 4

U.S. CLO Transition And Default Summary

2018 versus one-year average

	--2018--						--One-year average--			
	Ratings (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)	Defaults (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)
Overall	2,603	96.4	3.0	0.7	0.0	0	79.5	13.7	6.8	0.08
Generation										
1.0	101	89.1	8.9	2.0	0.0	0	73.6	17.1	9.4	0.1
2.0	2,502	96.6	2.7	0.6	0.0	0	95.0	4.8	0.2	0.0
Vintage										
Pre-2005	0	N/A	N/A	N/A	N/A	N/A	84.1	9.1	6.8	0.2
2005	0	N/A	N/A	N/A	N/A	N/A	71.6	18.1	10.3	0.0
2006	37	78.4	16.2	5.4	0.0	0	69.5	20.1	10.4	0.1
2007	51	100.0	0.0	0.0	0.0	0	68.2	21.6	10.3	0.0
2008	13	76.9	23.1	0.0	0.0	0	68.8	20.3	10.9	0.5

Table 4

U.S. CLO Transition And Default Summary (cont.)**2018 versus one-year average**

	--2018--						--One-year average--			
	Ratings (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)	Defaults (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)
2009	0	N/A	N/A	N/A	N/A	N/A	70.7	21.3	8.0	0.0
2010	0	N/A	N/A	N/A	N/A	N/A	87.0	13.0	0.0	0.0
2011	0	N/A	N/A	N/A	N/A	N/A	84.6	15.4	0.0	0.0
2012	33	75.8	18.2	6.1	0.0	0	92.2	7.7	0.1	0.0
2013	278	87.1	11.2	1.8	0.0	0	94.3	5.3	0.3	0.0
2014	260	94.6	1.9	3.5	0.0	0	96.8	2.6	0.6	0.0
2015	184	100.0	0.0	0.0	0.0	0	97.5	2.5	0.0	0.0
2016	484	99.4	0.6	0.0	0.0	0	98.8	1.2	0.0	0.0
2017	1,263	98.2	1.8	0.0	0.0	0	98.2	1.8	0.0	0.0
Rating category										
AAA	711	100.0	N/A	0.0	0.0	0	92.1	0.0	7.9	0.0
AA	518	94.0	6.0	0.0	0.0	0	72.9	22.6	4.4	0.0
A	431	94.9	5.1	0.0	0.0	0	75.1	17.7	7.2	0.0
BBB	395	95.9	4.1	0.0	0.0	0	75.9	15.8	8.3	0.0
BB	392	96.2	1.8	2.0	0.0	0	79.0	13.1	7.8	0.0
B	156	92.9	0.6	6.4	0.0	0	77.1	19.5	3.5	0.1
CCC	0	N/A	N/A	N/A	N/A	N/A	58.2	38.8	3.0	0.8
CC	0	N/A	N/A	N/A	N/A	N/A	59.2	7.0	33.8	33.8
Rating grade										
Investment-grade	2,055	96.6	3.4	0.0	0.0	0	80.3	12.7	6.9	0.0
Speculative-grade	548	95.3	1.5	3.3	0.0	0	75.9	17.6	6.5	0.4

*Including defaults. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. N/A--Not applicable. Source: S&P Global Fixed Income Research.

Aggregating across vintages into the 1.0 and 2.0 generations, the upgrade rate for 1.0 transactions was 8.9% compared with 2.7% for 2.0 transactions. By contrast, the downgrade rate was less than 2.0% for both 1.0 and 2.0 transactions (see Table 4).

Table 5

U.S. CLO Lifetime Transition And Default Summary (1996 - 2018)

	Ratings (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)	Defaults (number)	Withdrawals (%)
Overall	10,894	72.1	22.8	5.1	0.3	38	72.4
Generation							
1.0	4,322	44.0	43.8	12.2	0.9	38	98.5
2.0	6,572	90.7	8.9	0.4	0.0	0	55.2

Table 5

U.S. CLO Lifetime Transition And Default Summary (1996 - 2018) (cont.)

	Ratings (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)	Defaults (number)	Withdrawals (%)
Vintage							
Pre-2005	1,381	59.4	26.6	14.0	1.7	24	98.3
2005	601	37.4	51.2	11.3	0.0	0	100.0
2006	1,090	36.8	51.5	11.7	0.7	8	98.0
2007	1,021	36.0	54.7	9.3	0.1	1	99.2
2008	207	38.6	42.5	18.8	2.4	5	94.7
2009	22	27.3	54.5	18.2	0.0	0	100.0
2010	33	60.6	39.4	0.0	0.0	0	100.0
2011	154	51.9	48.1	0.0	0.0	0	100.0
2012	629	74.9	24.8	0.3	0.0	0	98.4
2013	988	77.8	21.2	1.0	0.0	0	94.3
2014	840	90.6	7.7	1.7	0.0	0	88.7
2015	481	94.2	5.8	0.0	0.0	0	90.2
2016	591	97.3	2.7	0.0	0.0	0	65.0
2017	1,267	98.2	1.8	0.0	0.0	0	25.7
2018	1,589	99.8	0.2	0.0	0.0	0	0.1
Rating category							
AAA	3,341	96.1	N/A	3.9	0.0	0	76.3
AA	2,004	61.8	36.6	1.6	0.0	1	72.1
A	1,969	58.1	39.7	2.2	0.3	5	73.5
BBB	1,790	56.8	34.6	8.6	0.5	9	72.7
BB	1,468	65.4	22.8	11.9	1.4	20	67.1
B	322	90.1	4.0	5.9	0.9	3	49.7
CCC	0	N/A	N/A	N/A	N/A	N/A	N/A
CC	0	N/A	N/A	N/A	N/A	N/A	N/A
Rating grade							
Investment-grade	9,104	72.6	23.5	4.0	0.2	15	74.0
Speculative-grade	1,790	69.8	19.4	10.8	1.3	23	64.0

*Including defaults. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR' when determining stable, upgrade, downgrade, and default rates. N/A--Not applicable. Source: S&P Global Fixed Income Research.

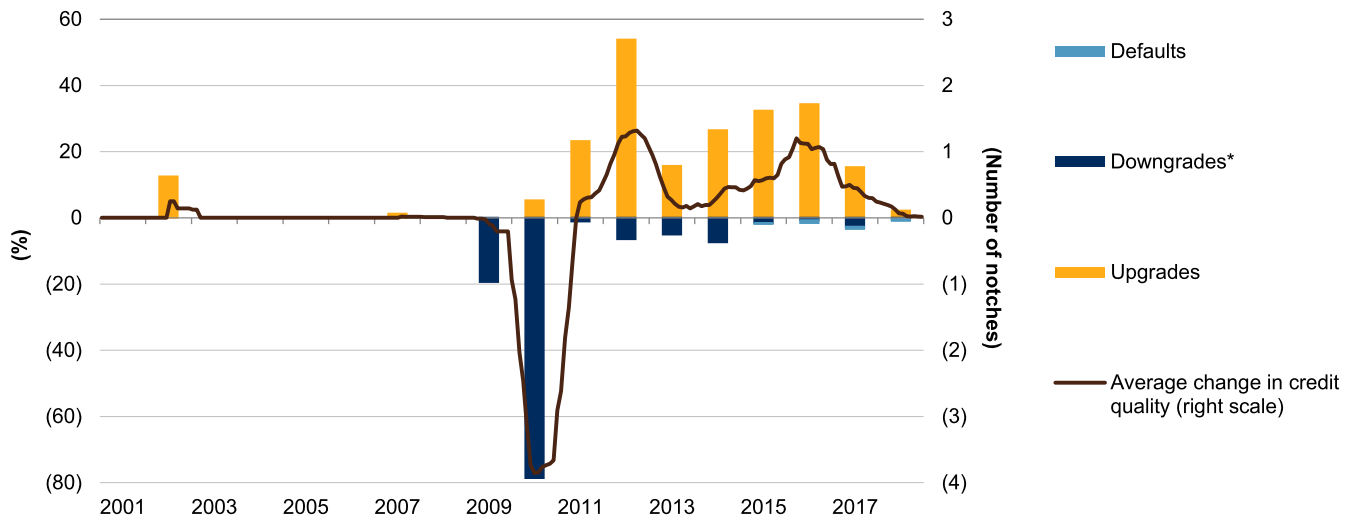
European CLOs

Annual upgrade rates for European CLOs exceeded 15% in each of the seven years from 2011 to 2017. However, in 2018, the European CLO upgrade rate declined to 2.2%, down from 15.3% the previous year (see Chart 12). As in the U.S., the pace of European CLO upgrades has slowed with the prevalence of CLO resets in recent years. This has resulted in fewer transactions that are

currently entering their amortization period. The downgrade rate has generally been much lower and decreased to 0.9% in 2018 from 3.3% a year earlier.

Chart 12

European CLO Transition Rates And Average Change In Credit Quality



*Excluding defaults. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. Source: S&P Global Fixed Income Research.

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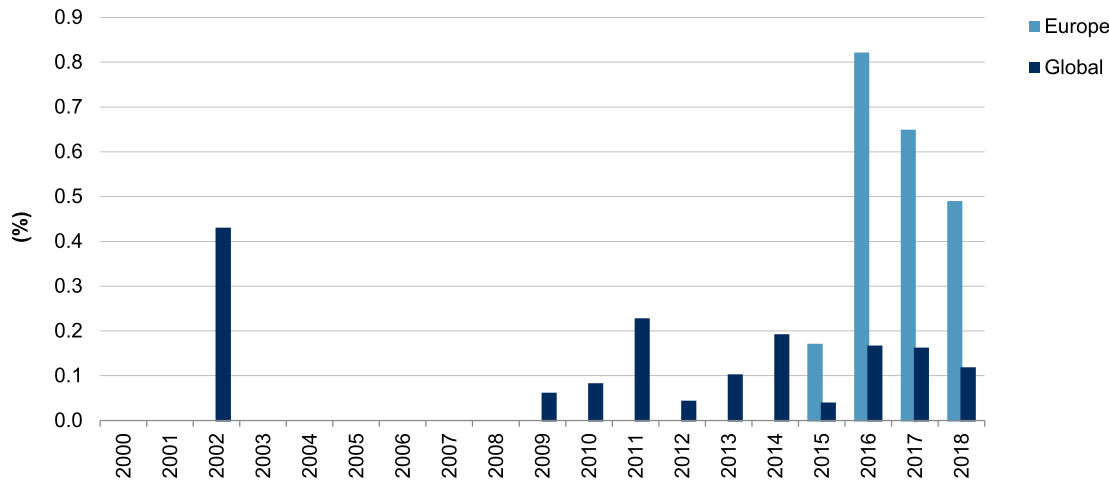
The average change in credit quality continued to be marginally positive in 2018, ending the year at +0.02 notches, though this was down from +0.25 notches a year earlier. European CLO ratings have consistently been trending higher on this 12-month trailing basis since mid-2011.

In 2018, European CLOs benefitted from the deleveraging of their portfolios as well as supportive credit performance on underlying global corporates. In Europe, as in the U.S., companies benefitted from continued economic expansion and accommodative financing conditions. We upgraded more European corporates than we downgraded, and the European corporate speculative-grade default rate fell to 1.9% in 2018 from 2.4% in 2017.

However, the European CLO sector has seen its first defaults in the past few years. In 2018, the default rate was 0.5%, down from 0.6% a year earlier (see Chart 13).

Chart 13

European CLO Default Rates



Source: S&P Global Fixed Income Research.

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As in the U.S., most ratings on legacy European CLO 1.0 transactions had been withdrawn or discontinued by the beginning of 2018. At the beginning of 2018, CLO 1.0 ratings accounted for only 23% of the European CLO universe. Unsurprisingly, however, upgrades in 2018 were most common in this group, with the CLO 1.0 upgrade rate as high as 7.4% as remaining transactions amortized. By contrast, the upgrade rate for the 2.0 generation was only 0.6%. Likewise, all the downgrades and defaults in 2018 were in 1.0 transactions from the 2007 and earlier vintages.

Finally, all the 2018 defaults in European CLOs were on securities that we rated in the 'CCC' or 'CC' categories at the beginning of the year (see Table 6).

Table 6

European CLO Transition And Default Summary

2018 versus one-year average

	Ratings (number)	--2018--					--One-year average--			
		Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)	Defaults (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)
Overall	820	97.0	2.2	0.9	0.49	4	71.9	16.9	11.2	0.14
Generation										
1.0	189	88.9	7.4	3.7	2.1	4	68.7	18.8	12.5	0.2
2.0	631	99.4	0.6	0.0	0.0	0	99.1	0.9	0.0	0.0
Vintage										
Pre-2005	1	0.0	0.0	100.0	100.0	1	78.1	10.0	11.9	0.6
2005	4	100.0	0.0	0.0	0.0	0	72.5	15.5	12.0	0.2
2006	46	82.6	13.0	4.3	4.3	2	67.3	19.9	12.7	0.1

Table 6

European CLO Transition And Default Summary (cont.)

2018 versus one-year average

	--2018--					--One-year average--				
	Ratings (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)	Defaults (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)
2007	138	91.3	5.8	2.9	0.7	1	64.6	23.3	12.1	0.0
2008	0	N/A	N/A	N/A	N/A	N/A	59.9	20.5	19.6	0.0
2009	0	N/A	N/A	N/A	N/A	N/A	25.0	75.0	0.0	0.0
2010	0	N/A	N/A	N/A	N/A	N/A	0.0	0.0	0.0	0.0
2011	0	N/A	N/A	N/A	N/A	N/A	0.0	0.0	0.0	0.0
2012	0	N/A	N/A	N/A	N/A	N/A	0.0	0.0	0.0	0.0
2013	5	100.0	0.0	0.0	0.0	0	98.1	1.9	0.0	0.0
2014	12	100.0	0.0	0.0	0.0	0	100.0	0.0	0.0	0.0
2015	31	100.0	0.0	0.0	0.0	0	99.2	0.8	0.0	0.0
2016	164	100.0	0.0	0.0	0.0	0	100.0	0.0	0.0	0.0
2017	419	99.0	1.0	0.0	0.0	0	99.0	1.0	0.0	0.0
Rating category										
AAA	182	100.0	N/A	0.0	0.0	0	85.3	0.0	14.7	0.0
AA	168	95.2	4.8	0.0	0.0	0	69.7	22.6	7.7	0.0
A	115	96.5	3.5	0.0	0.0	0	66.9	23.1	10.0	0.0
BBB	116	98.3	1.7	0.0	0.0	0	70.3	17.7	12.0	0.0
BB	118	95.8	2.5	1.7	0.0	0	70.9	16.9	12.1	0.0
B	109	100.0	0.0	0.0	0.0	0	66.5	21.0	12.5	0.0
CCC	10	50.0	10.0	40.0	30.0	3	62.1	30.0	7.9	1.7
CC	2	50.0	0.0	50.0	50.0	1	82.1	0.0	17.9	17.9
Rating grade										
Investment-grade	581	97.6	2.4	0.0	0.0	0	73.5	15.4	11.1	0.0
Speculative-grade	239	95.4	1.7	2.9	1.7	4	68.0	20.7	11.4	0.5

*Including defaults. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. N/A--Not applicable. Source: S&P Global Fixed Income Research.

Table 7

European CLO Lifetime Transition And Default Summary (2001 - 2018)

	Ratings (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)	Defaults (number)	Withdrawals (%)
Overall	2,503	61.0	21.0	18.1	0.8	20	72.0
Generation							
1.0	1,443	33.3	35.4	31.3	1.4	20	97.4
2.0	1,060	98.7	1.3	0.0	0.0	0	37.4

Table 7

European CLO Lifetime Transition And Default Summary (2001 - 2018) (cont.)

	Ratings (number)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)	Defaults (number)	Withdrawals (%)
Vintage							
Pre-2005	288	45.1	15.3	39.6	4.9	14	95.1
2005	143	30.8	32.9	36.4	2.1	3	97.9
2006	415	32.8	41.9	25.3	0.5	2	96.9
2007	500	29.6	45.4	25.0	0.2	1	98.6
2008	91	24.2	14.3	61.5	0.0	0	100.0
2009	6	0.0	100.0	0.0	0.0	0.0	100.0
2010	0	N/A	N/A	N/A	N/A	N/A	N/A
2011	0	N/A	N/A	N/A	N/A	N/A	N/A
2012	0	N/A	N/A	N/A	N/A	N/A	N/A
2013	117	93.2	6.8	0.0	0.0	0	100.0
2014	47	100.0	0.0	0.0	0.0	0	91.5
2015	105	98.1	1.9	0.0	0.0	0	83.8
2016	176	100.0	0.0	0.0	0.0	0	66.5
2017	423	99.1	0.9	0.0	0.0	0	7.3
2018	192	100.0	0.0	0.0	0.0	0	0.0
Rating category							
AAA	702	84.0	N/A	16.0	0.0	0	80.8
AA	468	55.8	36.8	7.5	0.0	0	66.9
A	405	46.2	42.5	11.4	0.0	0	73.8
BBB	445	44.5	27.6	27.9	0.7	3	77.1
BB	347	47.6	15.6	36.9	4.6	16	67.7
B	136	91.9	2.9	5.1	0.7	1	33.1
CCC	0	N/A	N/A	N/A	N/A	N/A	N/A
CC	0	N/A	N/A	N/A	N/A	N/A	N/A
Rating grade							
Investment-grade	2,020	61.2	23.1	15.7	0.1	3	75.3
Speculative-grade	483	60.0	12.0	28.0	3.5	17	58.0

*Including defaults. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR' when determining stable, upgrade, downgrade, and default rates. N/A--Not applicable. Source: S&P Global Fixed Income Research.

Appendix I: Terminology, Data Selection, And Calculation Approaches

This appendix discusses the data and calculations and explains the terminology we use in this report.

This global CLO default and ratings transition study uses our database of long-term global-scale

issue credit ratings. We do not include national- and regional-scale ratings. The analysis also excludes public information ('pi') ratings, issuer credit ratings, and short-term issue ratings.

Our ongoing enhancement of the database used to generate this study may lead to changes in the reported statistics from one edition of the study to the next. However, each study will include statistics for previous years, ensuring that the study is self-consistent and effectively supersedes any previous editions.

Issues included in this study

The study analyzes 13,397 rating histories of CLO securities that S&P Global Ratings first rated in the U.S. and Europe from 1996 until Dec. 31, 2018. The term "CLO" in this report refers to cash-flow collateralized loan obligations backed by loans to large corporates. Most transactions in this sector are overseen by a collateral manager and backed by a portfolio of broadly syndicated leveraged loans. We do not include transactions backed by loans to small and midsize enterprises (SMEs). We include the ratings on combination (or combo) notes separately from, and in addition to, any ratings on these notes' underlying components.

Region definitions

This study presents rating transitions for global CLO transactions. In some analyses, we segment default and transition statistics by region. In defining a transaction's region, we use the location where we perform surveillance as the primary way to determine its region. We may also consider the transaction's issuer country (unless this is a tax-haven country such as the Cayman Islands), the domicile(s) of the underlying assets, or both.

Vintage definition

In this report, we classify a security's vintage based on the date on which we first assigned it a rating. Usually this is close to the security's original issuance date. However, in some cases we may first assign a rating to a security some time after closing.

We also segment CLO transactions into 1.0 and 2.0 generations, generally referring to transactions originated before and after the 2008-2009 financial crisis, respectively. For these purposes, we consider CLO 2.0 transactions to be those issued since the beginning of 2010, designating those issued in 2009 or earlier as CLO 1.0 transactions.

Rating transitions

Our rating transition statistics use a static-pool approach. To calculate the transition statistics over a given time period (or transition window), we consider the static pool of ratings outstanding at the beginning that time period. The transition statistics for that static pool of ratings are then based on the movements in ratings between the start and end of the transition window. For instance, we calculated the 2018 transition rates by determining the ratings on each security outstanding at the start of 2018 and determining the ratings on those same securities at the end of 2018. We then calculate statistics such as upgrade, downgrade, and stability rates, equivalent to the proportion of securities in the static pool with ratings that moved up, down, or remained the same, respectively, over the transition window. During this process, we count each security only once, even if the security experienced more than one rating change during the transition window being observed. In other words, we use the rating on a given security at the start and end of the

transition window to calculate the transition rates, disregarding any interim rating changes.

Rating modifiers

We use rating modifiers ('+' and '-') to calculate the upgrade, downgrade, and stability rates quoted in the text, tables, and charts throughout this study. However, the transition matrices in Appendix II of this report show only the less granular full rating categories for practical reasons. In other words, while we count transitions such as 'AA' to 'AA+' as an upgrade and 'BBB+' to 'BBB-' as a downgrade in the transition statistics we cite in this report, in the corresponding transition matrices, these transitions would appear in the cells corresponding to a stable rating category classification, such as 'AA' to 'AA', or 'BBB' to 'BBB'.

Rating discontinuance or withdrawal

We may discontinue ratings when, for example, a rated obligation's payments have been made in full in accordance with its terms or when a rated issue matures. Ratings may also be withdrawn, for example, because of a lack of sufficient information of satisfactory quality or at the issuer's request. In these cases, the rating may change to 'NR' (not rated). When we withdraw or discontinue ratings within the transition window under consideration, we may either derive our reported statistics by classifying the rating transition as a move to 'NR' (the "NR-included" approach) or--for some other analyses--we may classify the transition as a move to the last "non-NR" rating before withdrawal or discontinuance (the "NR-adjusted" approach). In the text of this report, when we refer to upgrade and downgrade rates, for example, we use the latter approach. In the tables and charts, we clarify the approach used in the footnotes. We do not include a security with a withdrawn rating at the beginning of a transition window in the transition and default rate calculations for that period.

Treatment of 'AAA' ratings

In this study, we include the ratings history of all securities in the relevant sector and/or region. This approach contrasts with the approach we used in some previous editions of our wider global structured finance default and transition studies. In those studies, we included the ratings history of all securities on which the original rating was below the 'AAA' level. However, for each structured finance transaction, we generally only included one of the securities that we originally rated 'AAA'.

Treatment of 'D' ratings

Counts of defaults and default rate statistics in this report are based on securities with ratings we lowered to 'D'. For the purposes of this report, when a security rating has moved to 'D', we consider this a terminal state and do not, for example, include such a security in any transition windows that start on a subsequent date. In practice, however, some securities with ratings that have migrated to 'D' may later once again be assigned a different rating. This can occur, for example, if the defaulted security is subsequently restructured to different terms, such as a lower coupon. In these cases, we treat the security's post-default rating history as if it were a new security, beginning from the date that the rating changed from 'D'. Where we segment statistics by vintage, however, we continue to base the vintage on the date we originally assigned a rating to the security.

Average change in credit quality calculation

Certain analyses in this study refer to the "average change in credit quality" of a set of structured finance securities over a given transition window. We define the average change in credit quality as the average number of rating notches by which ratings changed during the stated transition window, where we take the average across all ratings in the set under consideration (e.g., a particular region or sector). In this averaging, we count downgrades as a negative number of notches, whereas we count upgrades as a positive number. We consider stable ratings to have undergone a transition of zero notches. We believe this measure acts as a useful summary of the credit performance of, for example, a given sector, since it combines the relative number of ratings undergoing transition with the severity of that transition.

Weighted-average transition and default rate calculation

For weighted-average transition rates (including default rates), we calculate the individual transition rates for different static pools. We then calculate a single averaged transition rate, weighted by the number of ratings in each static pool. We use this technique, for example, to determine the five-year weighted-average transition rates by analyzing different static pools over different five-year periods and aggregating.

Average cumulative default rate calculation

In this report, we also calculate and present average cumulative default rates (CDRs) for different time horizons. For example, Table 3 shows that the five-year average CDR for 'BBB' rated global CLOs has been 0.11% and the 10-year average has been 0.89%.

We first consider the static pool of ratings at the beginning of each calendar year. For each static pool, we calculate the marginal default rates for each calendar year after the static pool's formation. These one-year marginal default rates are "conditional on survival." For example, the marginal default rate for the third year is the number of defaults during the third year, divided by the number of ratings from the static pool that had "survived" (not moved to 'D') by the beginning of the third year. We then average the marginal default rates for each time horizon across static pools, weighting by the number of surviving ratings at the beginning of each time horizon, to give an average marginal default rate per time horizon, as well as average marginal survival rates (equal to one minus the average marginal default rate). Finally, the average cumulative default rate to each time horizon is calculated as one minus the product of marginal survival rates up to that time horizon.

We note that this approach differs from the calculations we use in constructing the weighted-average multiyear default and transition rates included elsewhere in this study (and as described above), where default rates are not conditional on survival.

Appendix II: List Of Global CLO Defaults And Near-Defaults

Tables 8 and 9 detail all the global CLO securities on which we have moved our ratings to 'D' and 'CC', respectively.

Table 8

Global CLO Tranches With Ratings Lowered To 'D' (2001 - 2018)

Date rating lowered to 'D'	Transaction	Tranche	Region	Vintage	Original rating
Sept. 17, 2002	KBC - Orion Commercial Loan Master Trust 1999-1	D-1	U.S.	1999	BB
Sept. 17, 2002	KBC - Orion Commercial Loan Master Trust 1999-1	D-2	U.S.	1999	BB
Nov. 4, 2009	Pine CCS Ltd	A-1	U.S.	2008	A-
Nov. 4, 2009	Pine CCS Ltd	A-2	U.S.	2008	A-
Dec. 17, 2009	Kingfisher Capital CLO Ltd.	A	U.S.	2008	BBB+
Oct. 15, 2010	Landmark II CDO Ltd.	B	U.S.	2002	AA
Oct. 26, 2010	Verano CCS Ltd	Sr Notes	U.S.	2008	A-
Oct. 26, 2010	Spruce CCS Ltd	Sr Nts	U.S.	2008	A
Nov. 8, 2010	GE Commercial Loan Trust Series 2006-1	Pfd Tr Crt	U.S.	2006	BB
April 19, 2011	Sandelman Finance 2006-1 Ltd	E	U.S.	2006	BB
Oct. 25, 2011	Landmark II CDO Ltd.	C	U.S.	2002	BBB
Oct. 25, 2011	Landmark II CDO Ltd.	D	U.S.	2002	BB
Oct. 25, 2011	GE Commercial Loan Trust Series 2006-2	D	U.S.	2006	BBB-
Oct. 25, 2011	GE Commercial Loan Trust Series 2006-2	Pfd Trust	U.S.	2006	BB
Oct. 25, 2011	GE Commercial Loan Trust Series 2006-3	C	U.S.	2006	A
Oct. 25, 2011	GE Commercial Loan Trust Series 2006-3	D	U.S.	2006	BBB-
Oct. 25, 2011	GE Commercial Loan Trust Series 2006-3	Pfd Tr Cer	U.S.	2006	BB
May 29, 2012	Rosedale CLO II Ltd	E	U.S.	2007	BB
Nov. 27, 2013	Katonah V, Ltd	D	U.S.	2003	BB
Nov. 27, 2013	Longhorn CDO III Ltd	E	U.S.	2003	BB
April 2, 2014	Stanfield Carrera CLO, Ltd.	C-1	U.S.	2002	BBB
April 2, 2014	Stanfield Carrera CLO, Ltd.	C-2	U.S.	2002	BBB
April 2, 2014	Stanfield Carrera CLO, Ltd.	D-1	U.S.	2002	BB
April 2, 2014	Stanfield Carrera CLO, Ltd.	D-2	U.S.	2002	BB
May 2, 2014	Premium Loan Trust I Ltd	C	U.S.	2004	BBB
May 2, 2014	Premium Loan Trust I Ltd	D	U.S.	2004	BB
July 18, 2014	Foxe Basin CLO 2003, Ltd.	D	U.S.	2003	BB
Aug. 12, 2014	Highland Loan Funding V Ltd.	C-1	U.S.	2001	BBB
Aug. 12, 2014	Highland Loan Funding V Ltd.	C-2	U.S.	2001	BBB
Aug. 12, 2014	Highland Loan Funding V Ltd.	D	U.S.	2001	BB+
Nov. 26, 2015	Leopard CLO I B.V.	E-1	Europe	2003	BB

Table 8

Global CLO Tranches With Ratings Lowered To 'D' (2001 - 2018) (cont.)

Date rating lowered to 'D'	Transaction	Tranche	Region	Vintage	Original rating
Nov. 26, 2015	Leopard CLO I B.V.	E-2	Europe	2003	BB
Aug. 4, 2016	North Westerly CLO I B.V.	IV-A	Europe	2003	BB-
Aug. 4, 2016	North Westerly CLO I B.V.	IV-B	Europe	2003	BB-
Aug. 10, 2016	Avoca CLO II B.V.	C-1	Europe	2004	BBB
Aug. 10, 2016	Avoca CLO II B.V.	C-2	Europe	2004	BBB
Aug. 10, 2016	Avoca CLO II B.V.	D	Europe	2004	BB
Aug. 10, 2016	Avoca CLO II B.V.	R Combo	Europe	2004	BB
Aug. 10, 2016	Avoca CLO II B.V.	T Combo	Europe	2004	BB+
Oct. 13, 2016	Leopard CLO II B.V.	D	Europe	2004	BB
Feb. 13, 2017	Leveraged Finance Europe Capital III B.V.	D	Europe	2004	BBB-
March 22, 2017	Avoca CLO III PLC	E	Europe	2005	BB
May 15, 2017	Leopard CLO III B.V.	E1	Europe	2005	BB-
May 15, 2017	Leopard CLO III B.V.	E2	Europe	2005	BB-
Sept. 26, 2017	North Westerly CLO II B.V.	D-1	Europe	2004	BB-
Sept. 26, 2017	North Westerly CLO II B.V.	D-2	Europe	2004	BB-
Nov. 7, 2017	Airlie CLO 2006-II Ltd	D	U.S.	2006	BB
Feb. 13, 2018	BACCHUS 2007-1 PLC	E	Europe	2007	BB-
April 6, 2018	Avoca CLO IV PLC	E Def	Europe	2006	BB
April 6, 2018	Avoca CLO V PLC	F	Europe	2006	B
Nov. 21, 2018	Leveraged Finance Europe Capital III B.V.	E	Europe	2004	BB-

As of Dec. 31, 2018. Excludes seven defaulting tranches that were rated confidentially. Source: S&P Global Fixed Income Research.

Table 9

Global CLO Tranches With Ratings At 'CC'*

Date rating lowered to 'CC'	Transaction	Tranche	Region	Vintage	Original rating
Oct. 2, 2015	Strawinsky I PLC	E	Europe	2007	BB+
Dec. 6, 2018	Global Leveraged Capital Credit Opportunity Fund I	E-1	U.S.	2006	BB
Dec. 6, 2018	Global Leveraged Capital Credit Opportunity Fund I	E-2	U.S.	2006	BB

*As of Dec. 31, 2018. Source: S&P Global Fixed Income Research.

Appendix III: Detailed Default And Transition Statistics

Tables 10-30 provide various default and transition rate statistics for global CLOs segmented into different subsectors.

Global CLOs

Table 10

Global CLO Cumulative Default Rates, Conditional On Survival (1997 - 2018) (%)

	--Time horizon (years)--									
	1	2	3	4	5	6	7	8	9	10
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	0.00	0.01	0.02	0.03	0.04	0.05	0.07	0.09	0.09	0.09
A	0.00	0.01	0.02	0.03	0.05	0.05	0.05	0.05	0.05	0.05
BBB	0.01	0.01	0.02	0.07	0.11	0.20	0.33	0.48	0.68	0.89
BB	0.02	0.13	0.24	0.33	0.48	0.67	1.00	1.54	2.29	3.37
B	0.07	0.17	0.33	0.51	0.84	1.31	1.49	1.88	3.08	6.31
CCC	1.18	2.57	4.13	5.84	7.45	8.60	9.79	10.78	12.28	12.28
CC	29.29	43.64	50.95	53.18	54.29	54.29	54.29	54.29	54.29	54.29
Investment grade	0.00	0.01	0.01	0.03	0.04	0.07	0.10	0.14	0.18	0.23
Speculative grade	0.42	0.84	1.26	1.68	2.15	2.58	3.05	3.65	4.48	5.64
Overall	0.09	0.19	0.28	0.39	0.50	0.61	0.74	0.88	1.05	1.26

Source: S&P Global Fixed Income Research.

Table 11

Global CLO Rating Transitions, 2018 And Multi-Year Averages, NR Adjusted (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
2018										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	4.96	95.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.55	4.03	95.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.20	0.00	2.15	97.65	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.20	0.78	97.84	1.18	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.00	98.11	1.13	0.75	0.00	0.00
CCC	0.00	0.00	0.00	0.00	0.00	10.00	60.00	0.00	0.00	30.00
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 11

Global CLO Rating Transitions, 2018 And Multi-Year Averages, NR Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
One-year weighted-average										
AAA	90.85	7.16	1.80	0.14	0.03	0.00	0.01	0.00	0.00	0.00
AA	15.70	79.75	3.19	1.12	0.18	0.04	0.03	0.00	0.00	0.00
A	2.28	12.24	78.43	4.39	2.09	0.38	0.19	0.01	0.00	0.00
BBB	0.42	2.27	8.92	80.05	4.08	2.14	2.09	0.02	0.00	0.01
BB	0.11	0.14	1.62	8.82	81.01	3.21	4.92	0.14	0.00	0.02
B	0.03	0.07	0.49	3.68	13.35	77.73	4.49	0.10	0.00	0.07
CCC	0.00	0.00	0.00	1.28	8.29	19.04	68.87	1.33	0.00	1.18
CC	0.00	0.00	0.00	0.00	2.02	2.02	1.01	65.66	0.00	29.29
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average										
AAA	81.62	14.72	3.29	0.25	0.10	0.00	0.01	0.00	0.00	0.00
AA	29.23	62.03	6.24	2.01	0.29	0.11	0.07	0.00	0.00	0.01
A	6.98	19.28	60.14	8.77	3.82	0.65	0.31	0.04	0.00	0.01
BBB	1.61	5.59	14.16	61.92	8.04	4.49	4.12	0.06	0.00	0.01
BB	0.46	0.90	3.72	14.96	64.06	5.92	9.58	0.27	0.00	0.13
B	0.11	0.36	1.75	8.37	22.27	59.92	6.95	0.11	0.00	0.18
CCC	0.00	0.00	0.35	3.77	14.87	30.04	46.55	1.98	0.00	2.43
CC	0.00	0.00	0.00	0.00	3.09	4.12	1.03	48.45	0.00	43.30
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average										
AAA	73.75	21.94	3.77	0.28	0.19	0.04	0.03	0.00	0.00	0.00
AA	40.46	48.34	8.32	2.24	0.35	0.17	0.11	0.00	0.00	0.02
A	13.10	21.11	48.07	11.99	4.45	0.78	0.40	0.08	0.00	0.02
BBB	3.65	9.01	15.12	49.18	11.50	6.01	5.34	0.16	0.00	0.02
BB	0.92	2.06	6.10	17.10	52.09	8.59	12.51	0.38	0.00	0.25
B	0.52	0.95	3.41	12.77	23.79	50.71	7.45	0.08	0.00	0.32
CCC	0.15	0.20	1.26	6.51	18.21	29.97	37.74	2.32	0.00	3.63
CC	0.00	0.00	0.00	0.00	4.26	5.32	1.06	39.36	0.00	50.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average										
AAA	69.52	26.46	3.45	0.22	0.23	0.07	0.05	0.00	0.00	0.00
AA	49.58	38.91	8.78	2.00	0.34	0.23	0.13	0.00	0.00	0.03
A	20.00	20.49	40.80	13.13	4.24	0.80	0.37	0.12	0.00	0.04
BBB	6.35	11.85	14.17	41.48	13.34	6.74	5.77	0.23	0.00	0.07

Table 11

Global CLO Rating Transitions, 2018 And Multi-Year Averages, NR Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
BB	1.46	3.49	8.61	17.03	44.33	10.53	13.66	0.52	0.00	0.37
B	0.91	1.78	5.29	16.64	23.52	43.44	7.70	0.23	0.00	0.50
CCC	0.37	0.53	2.21	9.14	19.12	29.15	32.67	2.15	0.00	4.67
CC	0.00	0.00	0.00	0.00	5.62	5.62	1.12	34.83	0.00	52.81
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average										
AAA	69.74	27.13	2.45	0.19	0.27	0.13	0.08	0.00	0.00	0.00
AA	57.32	32.50	7.85	1.56	0.32	0.27	0.14	0.00	0.00	0.04
A	26.24	20.15	36.49	12.31	3.37	0.86	0.36	0.16	0.00	0.05
BBB	9.42	13.12	12.97	37.47	13.64	7.05	5.91	0.29	0.00	0.12
BB	2.38	5.28	10.35	15.93	38.95	12.44	13.51	0.61	0.00	0.56
B	1.31	3.23	7.87	19.46	23.51	35.32	7.93	0.49	0.00	0.87
CCC	0.62	0.96	3.51	11.61	19.83	28.22	27.88	1.81	0.00	5.55
CC	0.00	0.00	0.00	0.00	5.62	5.62	1.12	33.71	0.00	53.93
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10-year weighted-average										
AAA	89.13	9.20	0.73	0.10	0.37	0.23	0.23	0.00	0.00	0.00
AA	69.93	23.78	3.14	1.74	0.55	0.15	0.44	0.00	0.00	0.26
A	34.40	27.06	30.32	4.48	1.45	1.02	0.60	0.60	0.00	0.09
BBB	5.20	9.74	17.86	39.00	11.20	8.22	6.98	0.64	0.00	1.17
BB	0.54	2.38	5.79	12.53	39.54	19.54	13.37	2.03	0.00	4.29
B	0.00	5.84	0.73	4.38	8.76	48.91	15.33	0.73	0.00	15.33
CCC	0.00	0.00	0.00	0.00	0.00	0.00	7.69	0.00	0.00	92.31
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.50	0.00	62.50
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. Source: S&P Global Fixed Income Research.

Table 12

Global CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
2018											
AAA	51.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94
AA	3.21	50.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.92
A	0.00	2.75	54.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.49
BBB	0.00	0.00	1.76	55.19	0.00	0.00	0.00	0.00	0.00	0.00	43.05

Table 12

Global CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
BB	0.00	0.00	0.20	0.20	56.86	0.59	0.00	0.00	0.00	0.00	42.16
B	0.00	0.00	0.00	0.00	0.00	52.08	0.75	0.75	0.00	0.00	46.42
CCC	0.00	0.00	0.00	0.00	0.00	10.00	10.00	0.00	0.00	30.00	50.00
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	0.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average											
AAA	68.22	7.12	1.78	0.14	0.03	0.00	0.01	0.00	0.00	0.00	22.70
AA	13.12	67.60	3.17	1.11	0.18	0.04	0.03	0.00	0.00	0.00	14.74
A	1.55	11.11	67.10	4.39	2.05	0.34	0.18	0.01	0.00	0.00	13.28
BBB	0.24	1.71	8.06	69.51	4.07	2.13	2.07	0.01	0.00	0.01	12.20
BB	0.01	0.08	1.38	8.02	70.40	3.14	4.92	0.13	0.00	0.02	11.88
B	0.00	0.03	0.36	3.13	12.53	64.75	4.33	0.10	0.00	0.07	14.71
CCC	0.00	0.00	0.00	0.94	7.99	18.20	61.96	1.33	0.00	1.18	8.39
CC	0.00	0.00	0.00	0.00	1.01	2.02	1.01	51.52	0.00	29.29	15.15
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average											
AAA	44.52	14.38	3.21	0.22	0.08	0.00	0.01	0.00	0.00	0.00	37.59
AA	18.01	42.85	6.18	1.96	0.28	0.08	0.06	0.00	0.00	0.01	30.58
A	4.01	14.98	41.75	8.72	3.76	0.60	0.27	0.04	0.00	0.01	25.86
BBB	0.71	3.45	10.94	44.22	7.95	4.45	4.00	0.04	0.00	0.01	24.21
BB	0.15	0.56	2.58	11.86	45.38	5.53	9.53	0.23	0.00	0.13	24.04
B	0.04	0.25	0.96	6.23	18.99	38.23	6.38	0.11	0.00	0.18	28.64
CCC	0.00	0.00	0.30	2.73	13.14	26.38	34.01	1.69	0.00	2.43	19.34
CC	0.00	0.00	0.00	0.00	1.03	4.12	1.03	26.80	0.00	43.30	23.71
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average											
AAA	30.47	20.93	3.58	0.22	0.13	0.04	0.03	0.00	0.00	0.00	44.60
AA	17.90	27.29	8.19	2.13	0.30	0.10	0.07	0.00	0.00	0.02	44.02
A	5.54	13.89	27.30	11.80	4.30	0.71	0.32	0.06	0.00	0.02	36.07
BBB	1.18	4.66	9.55	28.63	11.22	5.83	4.99	0.12	0.00	0.02	33.78
BB	0.28	0.95	3.38	11.21	29.88	7.93	12.36	0.31	0.00	0.25	33.47
B	0.08	0.48	1.19	7.61	16.38	25.22	5.83	0.08	0.00	0.32	42.82
CCC	0.00	0.10	0.91	4.09	13.87	21.64	21.44	1.82	0.00	3.63	32.49
CC	0.00	0.00	0.00	0.00	1.06	5.32	0.00	9.57	0.00	50.00	34.04
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 12

Global CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
Four-year weighted-average											
AAA	23.44	24.42	3.11	0.14	0.10	0.07	0.05	0.00	0.00	0.00	48.67
AA	15.94	18.19	8.49	1.81	0.25	0.11	0.07	0.00	0.00	0.03	55.11
A	6.72	11.01	19.68	12.70	3.99	0.67	0.23	0.07	0.00	0.04	44.90
BBB	1.49	5.04	6.98	19.74	12.65	6.25	5.07	0.18	0.00	0.07	42.52
BB	0.34	1.39	3.90	8.75	19.91	9.47	13.17	0.43	0.00	0.37	42.29
B	0.14	0.55	1.37	7.70	12.63	15.31	4.74	0.23	0.00	0.50	56.84
CCC	0.00	0.26	1.00	4.78	12.39	16.33	13.97	1.47	0.00	4.67	45.12
CC	0.00	0.00	0.00	0.00	1.12	3.37	0.00	1.12	0.00	52.81	41.57
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average											
AAA	21.86	23.67	1.97	0.08	0.05	0.09	0.07	0.00	0.00	0.00	52.21
AA	13.55	14.24	7.34	1.25	0.20	0.11	0.03	0.00	0.00	0.04	63.24
A	6.79	8.54	16.57	11.50	3.00	0.65	0.15	0.08	0.00	0.05	52.66
BBB	2.03	4.31	4.68	16.20	12.16	6.01	4.71	0.23	0.00	0.12	49.55
BB	0.36	1.88	3.73	5.63	14.59	10.76	12.33	0.48	0.00	0.56	49.68
B	0.11	0.98	2.02	6.94	9.84	7.65	3.39	0.38	0.00	0.87	67.80
CCC	0.06	0.34	1.08	4.65	9.97	12.07	8.39	0.96	0.00	5.55	56.94
CC	0.00	0.00	0.00	0.00	1.12	1.12	0.00	0.00	0.00	53.93	43.82
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10-year weighted-average											
AAA	2.44	0.41	0.00	0.00	0.00	0.06	0.03	0.00	0.00	0.00	97.07
AA	3.40	1.37	0.30	0.15	0.15	0.00	0.00	0.00	0.00	0.26	94.38
A	1.36	1.93	1.64	0.68	0.26	0.23	0.09	0.06	0.00	0.09	93.68
BBB	0.16	0.50	1.09	1.88	1.59	1.22	1.46	0.27	0.00	1.17	90.66
BB	0.00	0.04	0.19	0.69	2.18	3.03	3.03	1.15	0.00	4.29	85.40
B	0.00	0.00	0.00	0.00	1.46	2.19	5.11	0.73	0.00	15.33	75.18
CCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.31	7.69
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.50	37.50
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Source: S&P Global Fixed Income Research.

Table 13

Global CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
2018										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	20.93	79.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	3.57	14.29	82.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.00	0.00	5.56	94.44	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	2.44	7.32	87.80	2.44	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.00	94.44	0.00	5.56	0.00	0.00
CCC	0.00	0.00	0.00	0.00	0.00	10.00	60.00	0.00	0.00	30.00
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average										
AAA	88.15	9.28	2.34	0.18	0.04	0.00	0.01	0.00	0.00	0.00
AA	19.72	74.26	4.22	1.48	0.24	0.05	0.04	0.00	0.00	0.00
A	2.93	15.07	72.63	5.82	2.78	0.51	0.25	0.01	0.00	0.00
BBB	0.53	2.84	10.93	74.91	5.28	2.77	2.71	0.03	0.00	0.01
BB	0.15	0.20	2.19	11.73	74.50	4.27	6.74	0.20	0.00	0.03
B	0.05	0.09	0.69	5.19	18.64	68.92	6.20	0.14	0.00	0.09
CCC	0.00	0.00	0.00	1.28	8.29	19.04	68.87	1.33	0.00	1.18
CC	0.00	0.00	0.00	0.00	2.02	2.02	1.01	65.66	0.00	29.29
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average										
AAA	77.38	18.12	4.05	0.30	0.13	0.00	0.02	0.00	0.00	0.00
AA	35.15	53.84	7.86	2.53	0.37	0.14	0.09	0.00	0.00	0.01
A	8.60	22.42	51.81	11.06	4.83	0.82	0.39	0.05	0.00	0.01
BBB	1.98	6.68	16.43	54.26	9.93	5.54	5.09	0.08	0.00	0.01
BB	0.60	1.16	4.74	18.71	54.37	7.50	12.41	0.35	0.00	0.17
B	0.14	0.47	2.29	10.97	28.85	47.95	8.96	0.14	0.00	0.23
CCC	0.00	0.00	0.35	3.77	14.87	30.04	46.55	1.98	0.00	2.43
CC	0.00	0.00	0.00	0.00	3.09	4.12	1.03	48.45	0.00	43.30
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average										
AAA	69.29	25.67	4.41	0.32	0.22	0.04	0.04	0.00	0.00	0.00
AA	46.39	40.28	9.90	2.67	0.41	0.20	0.13	0.00	0.00	0.02
A	15.41	23.02	40.37	14.33	5.33	0.94	0.48	0.09	0.00	0.03
BBB	4.26	10.32	16.53	41.85	13.50	7.06	6.27	0.18	0.00	0.03
BB	1.12	2.51	7.33	20.03	42.74	10.28	15.24	0.46	0.00	0.30

Table 13

Global CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
B	0.63	1.16	4.17	15.60	28.68	40.31	8.96	0.10	0.00	0.39
CCC	0.15	0.20	1.26	6.51	18.21	29.97	37.74	2.32	0.00	3.63
CC	0.00	0.00	0.00	0.00	4.26	5.32	1.06	39.36	0.00	50.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average										
AAA	65.98	29.53	3.85	0.25	0.26	0.07	0.06	0.00	0.00	0.00
AA	54.39	32.63	9.90	2.26	0.39	0.26	0.14	0.00	0.00	0.03
A	22.44	21.36	35.00	14.88	4.81	0.91	0.42	0.14	0.00	0.04
BBB	7.06	13.01	14.79	35.89	14.92	7.54	6.45	0.26	0.00	0.08
BB	1.68	4.00	9.76	18.81	37.12	11.94	15.67	0.59	0.00	0.42
B	1.04	2.03	6.03	18.98	26.47	35.99	8.63	0.26	0.00	0.57
CCC	0.37	0.53	2.21	9.14	19.12	29.15	32.67	2.15	0.00	4.67
CC	0.00	0.00	0.00	0.00	5.62	5.62	1.12	34.83	0.00	52.81
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average										
AAA	67.74	28.93	2.62	0.20	0.29	0.14	0.09	0.00	0.00	0.00
AA	60.16	28.94	8.41	1.67	0.34	0.28	0.15	0.00	0.00	0.05
A	28.06	20.28	33.23	13.25	3.63	0.93	0.39	0.17	0.00	0.06
BBB	10.00	13.82	13.04	34.29	14.56	7.52	6.31	0.31	0.00	0.13
BB	2.57	5.71	11.08	16.66	34.72	13.37	14.62	0.66	0.00	0.61
B	1.40	3.45	8.42	20.81	24.78	31.27	8.42	0.53	0.00	0.94
CCC	0.62	0.96	3.51	11.61	19.83	28.22	27.88	1.81	0.00	5.55
CC	0.00	0.00	0.00	0.00	5.62	5.62	1.12	33.71	0.00	53.93
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10-year weighted-average										
AAA	89.13	9.20	0.73	0.10	0.37	0.23	0.23	0.00	0.00	0.00
AA	69.93	23.78	3.14	1.74	0.55	0.15	0.44	0.00	0.00	0.26
A	34.40	27.06	30.32	4.48	1.45	1.02	0.60	0.60	0.00	0.09
BBB	5.20	9.74	17.86	39.00	11.20	8.22	6.98	0.64	0.00	1.17
BB	0.54	2.38	5.79	12.53	39.54	19.54	13.37	2.03	0.00	4.29
B	0.00	5.84	0.73	4.38	8.76	48.91	15.33	0.73	0.00	15.33
CCC	0.00	0.00	0.00	0.00	0.00	0.00	7.69	0.00	0.00	92.31
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.50	0.00	62.50
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. Source: S&P Global Fixed Income Research.

Table 14

Global CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
2018											
AAA	9.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.43
AA	9.30	6.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83.72
A	0.00	7.14	7.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.71
BBB	0.00	0.00	5.56	8.33	0.00	0.00	0.00	0.00	0.00	0.00	86.11
BB	0.00	0.00	2.44	0.00	19.51	0.00	0.00	0.00	0.00	0.00	78.05
B	0.00	0.00	0.00	0.00	0.00	13.89	0.00	5.56	0.00	0.00	80.56
CCC	0.00	0.00	0.00	0.00	0.00	10.00	10.00	0.00	0.00	30.00	50.00
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	0.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average											
AAA	68.20	9.22	2.31	0.18	0.04	0.00	0.01	0.00	0.00	0.00	20.05
AA	16.70	67.25	4.20	1.47	0.24	0.05	0.04	0.00	0.00	0.00	10.05
A	2.04	13.96	66.23	5.82	2.72	0.45	0.23	0.01	0.00	0.00	8.53
BBB	0.31	2.18	9.99	68.40	5.27	2.76	2.68	0.01	0.00	0.01	8.39
BB	0.02	0.12	1.89	10.77	67.83	4.20	6.74	0.18	0.00	0.03	8.22
B	0.00	0.05	0.51	4.41	17.54	58.26	6.01	0.14	0.00	0.09	12.99
CCC	0.00	0.00	0.00	0.94	7.99	18.20	61.96	1.33	0.00	1.18	8.39
CC	0.00	0.00	0.00	0.00	1.01	2.02	1.01	51.52	0.00	29.29	15.15
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average											
AAA	45.39	17.70	3.95	0.27	0.09	0.00	0.02	0.00	0.00	0.00	32.59
AA	22.09	43.26	7.78	2.47	0.35	0.10	0.07	0.00	0.00	0.01	23.87
A	5.04	18.08	41.76	11.00	4.75	0.76	0.34	0.05	0.00	0.01	18.21
BBB	0.88	4.22	13.02	43.58	9.81	5.50	4.95	0.05	0.00	0.01	17.97
BB	0.20	0.73	3.33	15.11	42.68	7.05	12.34	0.30	0.00	0.17	18.10
B	0.05	0.33	1.26	8.17	24.74	30.53	8.26	0.14	0.00	0.23	26.28
CCC	0.00	0.00	0.30	2.73	13.14	26.38	34.01	1.69	0.00	2.43	19.34
CC	0.00	0.00	0.00	0.00	1.03	4.12	1.03	26.80	0.00	43.30	23.71
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average											
AAA	31.82	24.49	4.19	0.26	0.15	0.04	0.04	0.00	0.00	0.00	39.01
AA	20.82	28.11	9.74	2.53	0.36	0.12	0.08	0.00	0.00	0.02	38.22
A	6.62	15.84	28.23	14.12	5.15	0.85	0.38	0.07	0.00	0.03	28.72
BBB	1.38	5.46	10.78	28.52	13.17	6.85	5.86	0.14	0.00	0.03	27.81
BB	0.34	1.15	4.11	13.46	27.95	9.52	15.05	0.37	0.00	0.30	27.73

Table 14

Global CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
B	0.10	0.58	1.45	9.30	19.96	19.77	7.03	0.10	0.00	0.39	41.33
CCC	0.00	0.10	0.91	4.09	13.87	21.64	21.44	1.82	0.00	3.63	32.49
CC	0.00	0.00	0.00	0.00	1.06	5.32	0.00	9.57	0.00	50.00	34.04
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average											
AAA	25.07	27.25	3.47	0.16	0.11	0.07	0.06	0.00	0.00	0.00	43.81
AA	17.64	19.42	9.58	2.04	0.29	0.12	0.08	0.00	0.00	0.03	50.81
A	7.61	12.03	21.18	14.42	4.53	0.76	0.26	0.08	0.00	0.04	39.09
BBB	1.67	5.64	7.55	20.51	14.15	6.99	5.67	0.20	0.00	0.08	37.54
BB	0.38	1.59	4.48	9.95	19.76	10.77	15.11	0.49	0.00	0.42	37.05
B	0.16	0.62	1.56	8.79	14.40	13.62	5.30	0.26	0.00	0.57	54.71
CCC	0.00	0.26	1.00	4.78	12.39	16.33	13.97	1.47	0.00	4.67	45.12
CC	0.00	0.00	0.00	0.00	1.12	3.37	0.00	1.12	0.00	52.81	41.57
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average											
AAA	23.16	25.23	2.10	0.09	0.05	0.10	0.07	0.00	0.00	0.00	49.20
AA	14.33	15.15	7.86	1.34	0.21	0.12	0.04	0.00	0.00	0.05	60.90
A	7.30	9.02	17.75	12.39	3.23	0.70	0.16	0.09	0.00	0.06	49.30
BBB	2.17	4.60	4.90	17.12	12.98	6.41	5.03	0.24	0.00	0.13	46.42
BB	0.39	2.04	4.04	6.08	15.37	11.59	13.35	0.51	0.00	0.61	46.01
B	0.12	1.05	2.16	7.42	10.52	7.77	3.62	0.41	0.00	0.94	65.98
CCC	0.06	0.34	1.08	4.65	9.97	12.07	8.39	0.96	0.00	5.55	56.94
CC	0.00	0.00	0.00	0.00	1.12	1.12	0.00	0.00	0.00	53.93	43.82
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10-year weighted-average											
AAA	2.44	0.41	0.00	0.00	0.00	0.06	0.03	0.00	0.00	0.00	97.07
AA	3.40	1.37	0.30	0.15	0.15	0.00	0.00	0.00	0.00	0.26	94.38
A	1.36	1.93	1.64	0.68	0.26	0.23	0.09	0.06	0.00	0.09	93.68
BBB	0.16	0.50	1.09	1.88	1.59	1.22	1.46	0.27	0.00	1.17	90.66
BB	0.00	0.04	0.19	0.69	2.18	3.03	3.03	1.15	0.00	4.29	85.40
B	0.00	0.00	0.00	0.00	1.46	2.19	5.11	0.73	0.00	15.33	75.18
CCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.31	7.69
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.50	37.50
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Source: S&P Global Fixed Income Research.

Table 15

Global CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
2018										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	3.89	96.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.39	3.47	96.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.21	0.00	1.89	97.89	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.00	0.21	98.72	1.07	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.00	98.69	1.31	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	3.30	96.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.31	3.69	95.96	0.04	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.04	0.35	2.14	97.47	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.09	0.94	98.62	0.36	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.45	99.22	0.34	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	6.37	93.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.84	7.39	91.67	0.10	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.06	0.94	4.52	94.49	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.23	2.25	96.96	0.56	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	1.05	98.50	0.45	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	9.31	90.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	1.34	11.40	87.12	0.13	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.15	1.51	7.02	91.31	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.47	3.65	95.02	0.86	0.00	0.00	0.00	0.00

Table 15

Global CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
B	0.00	0.00	0.00	0.00	1.75	97.60	0.66	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	11.90	88.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	2.02	14.03	83.75	0.20	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.34	2.06	8.92	88.67	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.83	4.88	93.34	0.95	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	2.58	96.31	1.11	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	17.69	82.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	2.77	18.48	78.56	0.18	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.84	2.74	12.00	84.42	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	1.56	7.11	90.22	1.11	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	5.08	94.07	0.85	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. Source: S&P Global Fixed Income Research.

Table 16

Global CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
2018											
AAA	55.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.06
AA	2.80	53.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.39
A	0.00	2.51	57.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.15
BBB	0.00	0.00	1.47	58.74	0.00	0.00	0.00	0.00	0.00	0.00	39.79
BB	0.00	0.00	0.00	0.21	60.13	0.64	0.00	0.00	0.00	0.00	39.02

Table 16

Global CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
B	0.00	0.00	0.00	0.00	0.00	58.08	0.87	0.00	0.00	0.00	41.05
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average											
AAA	68.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.68
AA	2.09	68.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.22
A	0.08	2.51	69.74	0.04	0.00	0.00	0.00	0.00	0.00	0.00	27.63
BBB	0.00	0.13	1.53	73.24	0.00	0.00	0.00	0.00	0.00	0.00	25.10
BB	0.00	0.00	0.00	0.58	77.37	0.27	0.00	0.00	0.00	0.00	21.78
B	0.00	0.00	0.00	0.00	0.34	80.54	0.22	0.00	0.00	0.00	18.90
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average											
AAA	40.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.25
AA	2.23	41.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.49
A	0.10	3.25	41.72	0.10	0.00	0.00	0.00	0.00	0.00	0.00	54.83
BBB	0.00	0.17	2.09	46.97	0.00	0.00	0.00	0.00	0.00	0.00	50.77
BB	0.00	0.00	0.00	0.84	54.56	0.39	0.00	0.00	0.00	0.00	44.20
B	0.00	0.00	0.00	0.00	0.45	63.01	0.30	0.00	0.00	0.00	36.24
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average											
AAA	22.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.49
AA	2.55	22.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.52
A	0.07	4.02	22.54	0.07	0.00	0.00	0.00	0.00	0.00	0.00	73.31
BBB	0.00	0.08	2.49	29.31	0.00	0.00	0.00	0.00	0.00	0.00	68.13
BB	0.00	0.00	0.00	0.86	38.72	0.62	0.00	0.00	0.00	0.00	59.80
B	0.00	0.00	0.00	0.00	0.22	49.78	0.44	0.00	0.00	0.00	49.56
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 16

Global CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
Four-year weighted-average											
AAA	9.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.55
AA	2.67	8.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	88.79
A	0.10	3.43	8.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	87.89
BBB	0.00	0.00	2.17	13.27	0.00	0.00	0.00	0.00	0.00	0.00	84.55
BB	0.00	0.00	0.00	0.59	20.93	0.59	0.00	0.00	0.00	0.00	77.88
B	0.00	0.00	0.00	0.00	0.00	27.31	0.74	0.00	0.00	0.00	71.96
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average											
AAA	2.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.73
AA	2.64	1.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	95.87
A	0.18	2.40	1.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	96.12
BBB	0.00	0.00	1.47	2.74	0.00	0.00	0.00	0.00	0.00	0.00	95.79
BB	0.00	0.00	0.00	0.22	5.11	0.67	0.00	0.00	0.00	0.00	94.00
B	0.00	0.00	0.00	0.00	0.00	5.93	0.00	0.00	0.00	0.00	94.07
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Source: S&P Global Fixed Income Research.

U.S. CLOs

Table 17

U.S. CLO Cumulative Default Rates, Conditional On Survival (1997 - 2018) (%)

	--Time horizon (years)--									
	1	2	3	4	5	6	7	8	9	10
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	0.00	0.01	0.02	0.03	0.05	0.07	0.09	0.11	0.11	0.11
A	0.00	0.01	0.03	0.04	0.06	0.06	0.06	0.06	0.06	0.06
BBB	0.01	0.01	0.03	0.09	0.15	0.27	0.40	0.55	0.73	0.91
BB	0.03	0.17	0.32	0.45	0.66	0.88	1.15	1.51	1.93	2.55
B	0.10	0.26	0.50	0.71	0.96	1.27	1.53	1.90	3.00	6.06
CCC	0.79	1.50	2.48	3.73	4.82	5.29	5.82	6.40	7.56	7.56

Table 17

U.S. CLO Cumulative Default Rates, Conditional On Survival (1997 - 2018) (%) (cont.)

	--Time horizon (years)--									
	1	2	3	4	5	6	7	8	9	10
CC	33.80	53.52	63.38	66.20	67.61	67.61	67.61	67.61	67.61	67.61
Investment grade	0.00	0.01	0.02	0.04	0.06	0.09	0.12	0.16	0.19	0.23
Speculative grade	0.39	0.77	1.14	1.48	1.86	2.13	2.45	2.84	3.39	4.11
Overall	0.08	0.16	0.24	0.32	0.41	0.49	0.58	0.68	0.80	0.93

Source: S&P Global Fixed Income Research.

Table 18

U.S. CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
2018										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	5.41	94.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.46	4.64	94.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.25	0.00	2.53	97.22	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.26	0.51	97.96	1.28	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.00	96.79	1.92	1.28	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average										
AAA	92.12	6.72	1.05	0.07	0.02	0.00	0.01	0.00	0.00	0.00
AA	16.02	80.15	3.09	0.59	0.05	0.05	0.04	0.00	0.00	0.00
A	1.98	11.66	80.05	4.57	1.29	0.32	0.13	0.01	0.00	0.00
BBB	0.44	2.20	8.50	81.50	3.78	1.64	1.90	0.01	0.00	0.01
BB	0.10	0.11	1.69	8.02	82.88	2.55	4.43	0.18	0.00	0.03
B	0.05	0.10	0.65	4.58	12.39	79.84	2.14	0.15	0.00	0.10
CCC	0.00	0.00	0.00	1.94	12.18	19.06	64.87	1.15	0.00	0.79
CC	0.00	0.00	0.00	0.00	2.82	2.82	1.41	59.15	0.00	33.80
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average										
AAA	84.35	13.56	1.86	0.13	0.08	0.00	0.02	0.00	0.00	0.00
AA	29.62	63.13	5.86	1.07	0.08	0.15	0.08	0.00	0.00	0.01
A	6.47	18.05	63.45	9.05	2.19	0.53	0.23	0.01	0.00	0.01
BBB	1.66	5.54	13.36	64.68	7.51	3.45	3.75	0.03	0.00	0.01
BB	0.49	0.92	3.76	13.29	67.67	4.77	8.62	0.31	0.00	0.17

Table 18

U.S. CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
B	0.16	0.49	2.43	10.20	20.18	63.46	2.64	0.16	0.00	0.27
CCC	0.00	0.00	0.53	6.00	21.01	30.01	38.92	2.03	0.00	1.50
CC	0.00	0.00	0.00	0.00	4.23	5.63	1.41	35.21	0.00	53.52
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average										
AAA	78.18	19.44	2.00	0.17	0.14	0.05	0.04	0.00	0.00	0.00
AA	41.57	49.67	7.09	1.18	0.13	0.21	0.13	0.00	0.00	0.02
A	12.06	20.41	52.68	11.44	2.38	0.65	0.33	0.01	0.00	0.03
BBB	3.67	8.81	14.55	53.20	10.43	4.49	4.72	0.10	0.00	0.03
BB	0.98	2.03	6.04	15.47	56.80	6.88	11.04	0.42	0.00	0.34
B	0.78	1.27	4.46	14.78	21.53	53.86	2.71	0.12	0.00	0.48
CCC	0.27	0.35	2.04	9.93	24.38	30.67	27.57	2.30	0.00	2.48
CC	0.00	0.00	0.00	0.00	5.63	7.04	1.41	22.54	0.00	63.38
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average										
AAA	75.06	22.72	1.73	0.16	0.18	0.08	0.06	0.00	0.00	0.00
AA	51.83	39.83	6.63	1.07	0.17	0.28	0.17	0.00	0.00	0.04
A	19.19	20.29	45.81	11.41	2.20	0.68	0.36	0.02	0.00	0.05
BBB	6.07	11.82	14.10	46.36	11.58	4.88	4.93	0.16	0.00	0.10
BB	1.55	3.48	8.47	15.51	49.92	8.57	11.40	0.59	0.00	0.50
B	1.33	2.10	6.93	19.17	20.99	45.70	2.87	0.21	0.00	0.70
CCC	0.63	0.89	3.49	13.14	23.86	28.87	23.59	1.79	0.00	3.75
CC	0.00	0.00	0.00	0.00	7.04	7.04	1.41	18.31	0.00	66.20
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average										
AAA	76.04	22.21	1.10	0.16	0.22	0.16	0.10	0.00	0.00	0.00
AA	60.95	32.49	4.92	0.92	0.16	0.32	0.19	0.00	0.00	0.06
A	26.01	21.08	40.77	9.34	1.66	0.70	0.38	0.00	0.00	0.07
BBB	9.00	13.53	13.89	42.33	11.33	4.86	4.71	0.20	0.00	0.16
BB	2.33	5.09	10.23	15.48	44.87	10.23	10.30	0.68	0.00	0.78
B	1.85	3.70	10.17	22.27	21.51	36.05	3.19	0.25	0.00	1.01
CCC	1.00	1.45	5.36	14.91	22.55	27.64	20.82	1.36	0.00	4.91
CC	0.00	0.00	0.00	0.00	7.04	7.04	1.41	16.90	0.00	67.61
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 18

U.S. CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
10-year weighted-average										
AAA	92.08	6.52	0.42	0.07	0.31	0.29	0.29	0.00	0.00	0.00
AA	73.39	21.92	1.71	1.61	0.34	0.10	0.59	0.00	0.00	0.34
A	37.74	27.44	30.64	2.66	0.28	0.46	0.67	0.00	0.00	0.11
BBB	6.46	11.72	20.08	40.03	10.20	5.51	4.45	0.28	0.00	1.27
BB	0.71	3.16	7.70	14.07	43.83	16.51	8.82	1.48	0.00	3.72
B	0.00	7.14	0.89	5.36	4.46	55.36	8.04	0.89	0.00	17.86
CCC	0.00	0.00	0.00	0.00	0.00	0.00	7.69	0.00	0.00	92.31
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.50	0.00	62.50
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. Source: S&P Global Fixed Income Research.

Table 19

U.S. CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
2018											
AAA	50.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.09
AA	3.67	46.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00
A	0.00	3.25	52.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.55
BBB	0.00	0.00	2.03	53.92	0.00	0.00	0.00	0.00	0.00	0.00	44.05
BB	0.00	0.00	0.26	0.26	56.12	0.77	0.00	0.00	0.00	0.00	42.60
B	0.00	0.00	0.00	0.00	0.00	46.79	1.28	1.28	0.00	0.00	50.64
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average											
AAA	68.71	6.71	1.03	0.06	0.02	0.00	0.01	0.00	0.00	0.00	23.45
AA	13.42	67.46	3.07	0.58	0.05	0.05	0.04	0.00	0.00	0.00	15.33
A	1.27	10.37	67.61	4.57	1.24	0.27	0.11	0.01	0.00	0.00	14.54
BBB	0.29	1.54	7.59	70.20	3.77	1.63	1.89	0.01	0.00	0.01	13.07
BB	0.02	0.10	1.36	7.18	71.19	2.52	4.43	0.18	0.00	0.03	12.99
B	0.00	0.05	0.45	3.93	11.50	66.85	2.04	0.15	0.00	0.10	14.93
CCC	0.00	0.00	0.00	1.41	11.74	18.18	58.34	1.15	0.00	0.79	8.38
CC	0.00	0.00	0.00	0.00	1.41	2.82	1.41	50.70	0.00	33.80	9.86
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 19

U.S. CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
Two-year weighted-average											
AAA	45.33	13.34	1.79	0.12	0.04	0.00	0.02	0.00	0.00	0.00	39.37
AA	18.53	43.15	5.78	1.02	0.07	0.11	0.06	0.00	0.00	0.01	31.27
A	3.56	13.40	43.23	9.01	2.11	0.48	0.17	0.01	0.00	0.01	28.00
BBB	0.78	3.24	9.95	45.49	7.42	3.42	3.68	0.03	0.00	0.01	25.96
BB	0.19	0.66	2.45	10.18	46.75	4.58	8.59	0.29	0.00	0.17	26.14
B	0.05	0.32	1.24	7.50	16.73	41.23	2.27	0.16	0.00	0.27	30.22
CCC	0.00	0.00	0.44	4.41	18.80	26.48	27.01	1.85	0.00	1.50	19.51
CC	0.00	0.00	0.00	0.00	1.41	5.63	1.41	22.54	0.00	53.52	15.49
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average											
AAA	31.37	18.60	1.84	0.14	0.06	0.05	0.04	0.00	0.00	0.00	47.91
AA	18.89	27.70	6.94	1.07	0.10	0.11	0.08	0.00	0.00	0.02	45.07
A	4.82	12.80	29.41	11.27	2.26	0.58	0.23	0.01	0.00	0.03	38.59
BBB	1.17	4.13	8.72	30.42	10.14	4.34	4.50	0.10	0.00	0.03	36.46
BB	0.32	0.95	2.94	9.73	31.21	6.50	10.93	0.38	0.00	0.34	36.70
B	0.12	0.54	1.27	8.38	14.11	26.60	1.75	0.12	0.00	0.48	46.62
CCC	0.00	0.18	1.42	6.29	18.53	22.16	11.79	1.95	0.00	2.48	35.20
CC	0.00	0.00	0.00	0.00	1.41	7.04	0.00	5.63	0.00	63.38	22.54
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average											
AAA	24.25	20.95	1.49	0.11	0.06	0.08	0.06	0.00	0.00	0.00	53.00
AA	16.96	18.63	6.32	0.88	0.13	0.13	0.09	0.00	0.00	0.04	56.83
A	6.34	10.45	21.83	10.99	2.05	0.55	0.19	0.02	0.00	0.05	47.54
BBB	1.32	4.46	6.55	21.94	10.81	4.46	4.48	0.14	0.00	0.10	45.74
BB	0.31	1.30	3.21	7.48	21.22	7.80	10.88	0.52	0.00	0.50	46.77
B	0.21	0.49	1.54	8.26	10.50	14.70	1.26	0.21	0.00	0.70	62.14
CCC	0.00	0.45	1.43	6.97	14.92	16.09	5.54	1.34	0.00	3.75	49.51
CC	0.00	0.00	0.00	0.00	1.41	4.23	0.00	1.41	0.00	66.20	26.76
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average											
AAA	22.36	19.20	0.77	0.09	0.03	0.12	0.08	0.00	0.00	0.00	57.35
AA	14.68	14.40	4.43	0.63	0.10	0.14	0.04	0.00	0.00	0.06	65.51
A	6.45	9.15	18.05	8.61	1.45	0.51	0.14	0.00	0.00	0.07	55.59
BBB	1.74	3.93	4.93	18.30	9.67	3.93	3.86	0.16	0.00	0.16	53.32

Table 19

U.S. CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
BB	0.26	1.34	2.99	5.26	15.98	8.79	9.07	0.57	0.00	0.78	54.96
B	0.08	1.18	2.27	6.81	8.15	6.55	1.01	0.25	0.00	1.01	72.69
CCC	0.09	0.45	1.55	5.82	9.91	11.55	2.27	0.91	0.00	4.91	62.55
CC	0.00	0.00	0.00	0.00	1.41	1.41	0.00	0.00	0.00	67.61	29.58
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10-year weighted-average											
AAA	1.80	0.04	0.00	0.00	0.00	0.07	0.04	0.00	0.00	0.00	98.05
AA	1.76	0.68	0.05	0.10	0.20	0.00	0.00	0.00	0.00	0.34	96.88
A	0.92	1.03	0.85	0.11	0.00	0.00	0.11	0.00	0.00	0.11	96.88
BBB	0.18	0.49	0.74	0.99	0.74	0.32	0.32	0.21	0.00	1.27	94.74
BB	0.00	0.05	0.25	0.46	1.17	1.78	0.41	0.97	0.00	3.72	91.18
B	0.00	0.00	0.00	0.00	0.00	1.79	1.79	0.89	0.00	17.86	77.68
CCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.31	7.69
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.50	37.50
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Source: S&P Global Fixed Income Research.

Table 20

U.S. CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
2018										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	18.75	81.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.00	22.22	77.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.00	0.00	9.09	90.91	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	7.69	7.69	84.62	0.00	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.00	84.62	0.00	15.38	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average										
AAA	89.44	9.01	1.40	0.10	0.03	0.00	0.01	0.00	0.00	0.00
AA	20.88	73.79	4.31	0.83	0.07	0.07	0.06	0.00	0.00	0.00
A	2.65	14.80	73.68	6.42	1.81	0.44	0.18	0.02	0.00	0.00
BBB	0.59	2.87	10.79	75.72	5.16	2.24	2.60	0.02	0.00	0.02

Table 20

U.S. CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
BB	0.14	0.17	2.46	11.44	75.28	3.60	6.59	0.27	0.00	0.05
B	0.08	0.15	1.01	7.12	18.95	69.22	3.09	0.23	0.00	0.15
CCC	0.00	0.00	0.00	1.94	12.18	19.06	64.87	1.15	0.00	0.79
CC	0.00	0.00	0.00	0.00	2.82	2.82	1.41	59.15	0.00	33.80
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average										
AAA	80.12	17.23	2.36	0.17	0.10	0.00	0.02	0.00	0.00	0.00
AA	36.98	53.41	7.76	1.42	0.11	0.20	0.11	0.00	0.00	0.01
A	8.33	21.48	54.18	12.03	2.92	0.71	0.30	0.02	0.00	0.02
BBB	2.14	6.88	15.96	55.88	9.74	4.48	4.87	0.04	0.00	0.02
BB	0.68	1.28	5.16	17.63	56.12	6.42	12.04	0.44	0.00	0.24
B	0.23	0.70	3.52	14.77	28.67	47.89	3.59	0.23	0.00	0.39
CCC	0.00	0.00	0.53	6.00	21.01	30.01	38.92	2.03	0.00	1.50
CC	0.00	0.00	0.00	0.00	4.23	5.63	1.41	35.21	0.00	53.52
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average										
AAA	73.81	23.33	2.40	0.20	0.17	0.06	0.04	0.00	0.00	0.00
AA	49.21	39.92	8.81	1.47	0.16	0.26	0.16	0.00	0.00	0.03
A	14.74	22.62	44.10	14.29	2.97	0.81	0.41	0.02	0.00	0.04
BBB	4.46	10.41	16.24	44.72	12.75	5.48	5.77	0.13	0.00	0.04
BB	1.28	2.63	7.68	18.97	45.52	8.64	14.31	0.54	0.00	0.44
B	1.04	1.69	5.94	19.68	28.03	39.44	3.37	0.16	0.00	0.64
CCC	0.27	0.35	2.04	9.93	24.38	30.67	27.57	2.30	0.00	2.48
CC	0.00	0.00	0.00	0.00	5.63	7.04	1.41	22.54	0.00	63.38
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average										
AAA	71.61	25.86	1.97	0.19	0.21	0.09	0.07	0.00	0.00	0.00
AA	58.23	32.07	7.71	1.24	0.19	0.32	0.19	0.00	0.00	0.04
A	22.15	21.32	39.28	13.36	2.59	0.79	0.42	0.02	0.00	0.06
BBB	6.94	13.29	14.89	39.92	13.35	5.63	5.68	0.19	0.00	0.11
BB	1.86	4.18	9.99	17.65	41.21	10.10	13.70	0.70	0.00	0.60
B	1.61	2.55	8.41	23.28	24.89	34.92	3.23	0.25	0.00	0.85
CCC	0.63	0.89	3.49	13.14	23.86	28.87	23.59	1.79	0.00	3.75
CC	0.00	0.00	0.00	0.00	7.04	7.04	1.41	18.31	0.00	66.20
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 20

U.S. CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
Five-year weighted-average										
AAA	74.13	23.97	1.19	0.18	0.24	0.18	0.11	0.00	0.00	0.00
AA	64.82	28.03	5.37	1.00	0.17	0.34	0.20	0.00	0.00	0.06
A	28.31	21.30	37.05	10.25	1.82	0.77	0.42	0.00	0.00	0.08
BBB	9.71	14.47	14.05	38.64	12.33	5.28	5.13	0.21	0.00	0.17
BB	2.60	5.67	11.20	16.43	39.75	11.26	11.47	0.76	0.00	0.87
B	2.04	4.08	11.22	24.58	23.19	30.06	3.43	0.28	0.00	1.11
CCC	1.00	1.45	5.36	14.91	22.55	27.64	20.82	1.36	0.00	4.91
CC	0.00	0.00	0.00	0.00	7.04	7.04	1.41	16.90	0.00	67.61
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10-year weighted-average										
AAA	92.08	6.52	0.42	0.07	0.31	0.29	0.29	0.00	0.00	0.00
AA	73.39	21.92	1.71	1.61	0.34	0.10	0.59	0.00	0.00	0.34
A	37.74	27.44	30.64	2.66	0.28	0.46	0.67	0.00	0.00	0.11
BBB	6.46	11.72	20.08	40.03	10.20	5.51	4.45	0.28	0.00	1.27
BB	0.71	3.16	7.70	14.07	43.83	16.51	8.82	1.48	0.00	3.72
B	0.00	7.14	0.89	5.36	4.46	55.36	8.04	0.89	0.00	17.86
CCC	0.00	0.00	0.00	0.00	0.00	0.00	7.69	0.00	0.00	92.31
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.50	0.00	62.50
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. Source: S&P Global Fixed Income Research.

Table 21

U.S. CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
2018											
AAA	12.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	87.18
AA	6.25	18.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.00
A	0.00	11.11	11.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.78
BBB	0.00	0.00	9.09	18.18	0.00	0.00	0.00	0.00	0.00	0.00	72.73
BB	0.00	0.00	7.69	0.00	38.46	0.00	0.00	0.00	0.00	0.00	53.85
B	0.00	0.00	0.00	0.00	0.00	38.46	0.00	15.38	0.00	0.00	46.15
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 21

U.S. CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
One-year weighted-average											
AAA	68.95	8.99	1.38	0.09	0.03	0.00	0.01	0.00	0.00	0.00	20.55
AA	17.78	67.20	4.28	0.81	0.07	0.07	0.06	0.00	0.00	0.00	9.73
A	1.76	13.52	66.95	6.42	1.74	0.37	0.16	0.02	0.00	0.00	9.06
BBB	0.39	2.05	9.79	69.17	5.14	2.22	2.58	0.02	0.00	0.02	8.62
BB	0.02	0.14	2.03	10.38	68.23	3.60	6.59	0.27	0.00	0.05	8.69
B	0.00	0.08	0.70	6.11	17.63	59.24	3.02	0.23	0.00	0.15	12.84
CCC	0.00	0.00	0.00	1.41	11.74	18.18	58.34	1.15	0.00	0.79	8.38
CC	0.00	0.00	0.00	0.00	1.41	2.82	1.41	50.70	0.00	33.80	9.86
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average											
AAA	46.41	16.94	2.28	0.15	0.05	0.00	0.02	0.00	0.00	0.00	34.15
AA	23.75	43.50	7.66	1.35	0.10	0.14	0.08	0.00	0.00	0.01	23.40
A	4.72	16.73	43.59	11.98	2.81	0.64	0.23	0.02	0.00	0.02	19.26
BBB	1.02	4.16	12.27	44.82	9.63	4.44	4.78	0.04	0.00	0.02	18.83
BB	0.27	0.92	3.41	13.88	43.35	6.22	11.99	0.41	0.00	0.24	19.30
B	0.08	0.47	1.80	10.86	23.98	30.39	3.13	0.23	0.00	0.39	28.67
CCC	0.00	0.00	0.44	4.41	18.80	26.48	27.01	1.85	0.00	1.50	19.51
CC	0.00	0.00	0.00	0.00	1.41	5.63	1.41	22.54	0.00	53.52	15.49
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average											
AAA	33.06	22.33	2.21	0.17	0.08	0.06	0.04	0.00	0.00	0.00	42.05
AA	22.79	28.74	8.62	1.33	0.13	0.14	0.10	0.00	0.00	0.03	38.12
A	6.02	14.98	31.07	14.09	2.83	0.72	0.29	0.02	0.00	0.04	29.95
BBB	1.43	5.03	10.10	30.52	12.39	5.30	5.50	0.13	0.00	0.04	29.55
BB	0.42	1.23	3.80	12.37	28.81	8.22	14.16	0.49	0.00	0.44	30.06
B	0.16	0.72	1.69	11.16	18.71	18.39	2.17	0.16	0.00	0.64	46.18
CCC	0.00	0.18	1.42	6.29	18.53	22.16	11.79	1.95	0.00	2.48	35.20
CC	0.00	0.00	0.00	0.00	1.41	7.04	0.00	5.63	0.00	63.38	22.54
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average											
AAA	26.22	23.85	1.69	0.13	0.07	0.09	0.07	0.00	0.00	0.00	47.88
AA	19.27	20.20	7.35	1.02	0.15	0.15	0.10	0.00	0.00	0.04	51.72
A	7.43	11.64	24.08	12.90	2.40	0.65	0.22	0.02	0.00	0.06	40.61
BBB	1.52	5.15	7.20	23.18	12.46	5.15	5.17	0.17	0.00	0.11	39.90

Table 21

U.S. CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
BB	0.38	1.56	3.85	8.86	21.12	9.24	13.07	0.63	0.00	0.60	40.68
B	0.25	0.59	1.87	10.03	12.74	11.81	1.36	0.25	0.00	0.85	60.24
CCC	0.00	0.45	1.43	6.97	14.92	16.09	5.54	1.34	0.00	3.75	49.51
CC	0.00	0.00	0.00	0.00	1.41	4.23	0.00	1.41	0.00	66.20	26.76
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average											
AAA	23.95	20.72	0.83	0.10	0.04	0.13	0.09	0.00	0.00	0.00	54.15
AA	15.76	15.57	4.84	0.69	0.11	0.16	0.05	0.00	0.00	0.06	62.77
A	7.07	9.81	19.71	9.46	1.59	0.56	0.15	0.00	0.00	0.08	51.57
BBB	1.90	4.28	5.22	19.66	10.53	4.28	4.20	0.17	0.00	0.17	49.59
BB	0.29	1.50	3.33	5.83	17.19	9.71	10.10	0.63	0.00	0.87	50.56
B	0.09	1.30	2.50	7.51	9.00	6.59	1.11	0.28	0.00	1.11	70.50
CCC	0.09	0.45	1.55	5.82	9.91	11.55	2.27	0.91	0.00	4.91	62.55
CC	0.00	0.00	0.00	0.00	1.41	1.41	0.00	0.00	0.00	67.61	29.58
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10-year weighted-average											
AAA	1.80	0.04	0.00	0.00	0.00	0.07	0.04	0.00	0.00	0.00	98.05
AA	1.76	0.68	0.05	0.10	0.20	0.00	0.00	0.00	0.00	0.34	96.88
A	0.92	1.03	0.85	0.11	0.00	0.00	0.11	0.00	0.00	0.11	96.88
BBB	0.18	0.49	0.74	0.99	0.74	0.32	0.32	0.21	0.00	1.27	94.74
BB	0.00	0.05	0.25	0.46	1.17	1.78	0.41	0.97	0.00	3.72	91.18
B	0.00	0.00	0.00	0.00	0.00	1.79	1.79	0.89	0.00	17.86	77.68
CCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.31	7.69
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.50	37.50
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Source: S&P Global Fixed Income Research.

Table 22

U.S. CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
2018										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	4.98	95.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.47	4.27	95.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.26	0.00	2.34	97.40	0.00	0.00	0.00	0.00	0.00	0.00

Table 22

U.S. CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
BB	0.00	0.00	0.00	0.26	98.42	1.32	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.00	97.90	2.10	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	3.70	96.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.35	3.96	95.64	0.04	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.05	0.39	2.24	97.32	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.10	0.99	98.51	0.40	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.56	99.02	0.42	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	6.93	93.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.91	7.74	91.25	0.11	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.06	1.02	4.62	94.30	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.24	2.32	96.82	0.61	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	1.22	98.25	0.52	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	9.93	90.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	1.43	11.66	86.77	0.14	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.16	1.62	6.96	91.26	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.50	3.65	94.94	0.91	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	1.94	97.34	0.73	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 22

U.S. CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
Four-year weighted-average										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	12.51	87.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	2.13	14.35	83.32	0.21	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.36	2.18	8.96	88.50	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.88	4.89	93.23	1.00	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	2.78	96.03	1.19	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	18.42	81.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	2.88	18.85	78.08	0.19	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.88	2.86	12.09	84.18	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	1.62	7.18	90.05	1.16	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	5.36	93.75	0.89	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. Source: S&P Global Fixed Income Research.

Table 23

U.S. CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
2018											
AAA	53.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.88
AA	3.59	47.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.20
A	0.00	3.08	53.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.84
BBB	0.00	0.00	1.82	54.95	0.00	0.00	0.00	0.00	0.00	0.00	43.23
BB	0.00	0.00	0.00	0.26	56.73	0.79	0.00	0.00	0.00	0.00	42.22
B	0.00	0.00	0.00	0.00	0.00	47.55	1.40	0.00	0.00	0.00	51.05
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 23

U.S. CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
One-year weighted-average											
AAA	68.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.98
AA	2.35	68.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.53
A	0.09	2.66	69.25	0.04	0.00	0.00	0.00	0.00	0.00	0.00	27.96
BBB	0.00	0.15	1.56	73.04	0.00	0.00	0.00	0.00	0.00	0.00	25.26
BB	0.00	0.00	0.00	0.60	77.27	0.30	0.00	0.00	0.00	0.00	21.84
B	0.00	0.00	0.00	0.00	0.42	80.59	0.28	0.00	0.00	0.00	18.72
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average											
AAA	41.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.69
AA	2.43	42.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.52
A	0.11	3.42	42.16	0.11	0.00	0.00	0.00	0.00	0.00	0.00	54.22
BBB	0.00	0.18	2.16	47.75	0.00	0.00	0.00	0.00	0.00	0.00	49.91
BB	0.00	0.00	0.00	0.86	55.32	0.43	0.00	0.00	0.00	0.00	43.40
B	0.00	0.00	0.00	0.00	0.52	65.45	0.35	0.00	0.00	0.00	33.68
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average											
AAA	22.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.10
AA	2.72	23.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.88
A	0.07	4.15	22.82	0.07	0.00	0.00	0.00	0.00	0.00	0.00	72.89
BBB	0.00	0.08	2.51	29.96	0.00	0.00	0.00	0.00	0.00	0.00	67.45
BB	0.00	0.00	0.00	0.83	39.34	0.66	0.00	0.00	0.00	0.00	59.17
B	0.00	0.00	0.00	0.00	0.24	51.33	0.48	0.00	0.00	0.00	47.94
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average											
AAA	9.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.05
AA	2.81	8.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	88.21
A	0.11	3.61	8.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	87.35
BBB	0.00	0.00	2.30	13.80	0.00	0.00	0.00	0.00	0.00	0.00	83.90

Table 23

U.S. CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
BB	0.00	0.00	0.00	0.63	21.68	0.63	0.00	0.00	0.00	0.00	77.07
B	0.00	0.00	0.00	0.00	0.00	28.17	0.79	0.00	0.00	0.00	71.03
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average											
AAA	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.63
AA	2.75	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	95.70
A	0.19	2.50	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	95.96
BBB	0.00	0.00	1.54	2.86	0.00	0.00	0.00	0.00	0.00	0.00	95.60
BB	0.00	0.00	0.00	0.23	5.32	0.69	0.00	0.00	0.00	0.00	93.75
B	0.00	0.00	0.00	0.00	0.00	6.25	0.00	0.00	0.00	0.00	93.75
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Source: S&P Global Fixed Income Research.

European CLOs

Table 24

European CLO Cumulative Default Rates, Conditional On Survival, 2002-2018 (%)

	--Time horizon (years)--									
	1	2	3	4	5	6	7	8	9	10
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.28	0.53	0.85
BB	0.00	0.00	0.00	0.00	0.00	0.14	0.60	1.62	3.27	5.75
B	0.00	0.00	0.00	0.13	0.60	1.38	1.38	1.85	3.48	7.34
CCC	1.68	3.93	6.25	8.60	11.04	13.44	15.94	17.92	20.76	N/A
CC	17.86	17.86	17.86	17.86	17.86	17.86	17.86	17.86	N/A	N/A
Investment grade	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.07	0.13	0.21
Speculative grade	0.48	0.99	1.54	2.13	2.80	3.57	4.40	5.52	7.21	9.63

Table 24

European CLO Cumulative Default Rates, Conditional On Survival, 2002-2018 (%) (cont.)

	--Time horizon (years)--									
	1	2	3	4	5	6	7	8	9	10
Overall	0.14	0.28	0.43	0.60	0.79	0.99	1.23	1.52	1.87	2.32

Source: S&P Global Fixed Income Research.

Table 25

European CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
2018										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	3.57	96.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.87	1.74	97.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.00	0.00	0.86	99.14	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.00	1.69	97.46	0.85	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
CCC	0.00	0.00	0.00	0.00	0.00	10.00	60.00	0.00	0.00	30.00
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average										
AAA	85.31	9.08	5.09	0.45	0.07	0.00	0.00	0.00	0.00	0.00
AA	14.61	78.38	3.52	2.88	0.61	0.00	0.00	0.00	0.00	0.00
A	3.30	14.22	72.93	3.77	4.80	0.60	0.39	0.00	0.00	0.00
BBB	0.34	2.48	10.29	75.40	5.04	3.74	2.69	0.04	0.00	0.00
BB	0.14	0.23	1.44	11.08	75.67	5.10	6.30	0.05	0.00	0.00
B	0.00	0.00	0.19	1.98	15.15	73.75	8.94	0.00	0.00	0.00
CCC	0.00	0.00	0.00	0.45	3.36	19.02	73.94	1.57	0.00	1.68
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82.14	0.00	17.86
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average										
AAA	69.65	19.82	9.57	0.74	0.22	0.00	0.00	0.00	0.00	0.00
AA	27.92	58.32	7.55	5.17	1.01	0.00	0.04	0.00	0.00	0.00
A	8.69	23.42	48.96	7.84	9.32	1.04	0.59	0.14	0.00	0.00
BBB	1.46	5.74	16.73	53.05	9.75	7.81	5.30	0.18	0.00	0.00
BB	0.39	0.83	3.58	19.71	53.87	9.17	12.30	0.15	0.00	0.00
B	0.00	0.10	0.42	4.82	26.31	53.04	15.30	0.00	0.00	0.00
CCC	0.00	0.00	0.11	0.90	7.01	30.09	56.33	1.92	0.00	3.62

Table 25

European CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84.62	0.00	15.38
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average										
AAA	54.09	33.08	11.65	0.77	0.41	0.00	0.00	0.00	0.00	0.00
AA	36.73	43.88	12.44	5.79	1.08	0.04	0.04	0.00	0.00	0.00
A	16.51	23.41	32.83	13.80	11.32	1.24	0.62	0.29	0.00	0.00
BBB	3.58	9.67	16.91	36.52	14.87	10.83	7.30	0.33	0.00	0.00
BB	0.73	2.14	6.28	21.60	39.07	13.34	16.58	0.26	0.00	0.00
B	0.00	0.35	1.39	8.91	28.13	44.68	16.55	0.00	0.00	0.00
CCC	0.00	0.00	0.23	1.99	10.07	29.04	51.17	2.34	0.00	5.15
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91.30	0.00	8.70
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average										
AAA	45.54	42.66	10.86	0.49	0.44	0.00	0.00	0.00	0.00	0.00
AA	42.08	35.87	15.93	5.11	0.93	0.08	0.00	0.00	0.00	0.00
A	22.64	21.12	24.67	18.68	10.81	1.22	0.41	0.46	0.00	0.00
BBB	7.21	11.95	14.37	26.47	18.77	12.44	8.35	0.44	0.00	0.00
BB	1.23	3.52	8.99	21.06	29.44	15.75	19.66	0.34	0.00	0.00
B	0.13	1.18	2.22	11.90	28.24	39.22	16.73	0.26	0.00	0.13
CCC	0.00	0.00	0.38	3.44	12.36	29.55	45.61	2.68	0.00	5.99
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average										
AAA	43.67	47.52	8.03	0.29	0.48	0.00	0.00	0.00	0.00	0.00
AA	45.11	32.55	17.67	3.71	0.87	0.10	0.00	0.00	0.00	0.00
A	26.99	17.20	22.82	21.81	8.85	1.39	0.28	0.67	0.00	0.00
BBB	10.70	11.88	10.22	22.85	20.60	13.64	9.52	0.59	0.00	0.00
BB	2.48	5.75	10.66	17.08	23.74	18.11	21.74	0.42	0.00	0.00
B	0.31	2.35	3.60	14.24	27.23	33.96	16.74	0.94	0.00	0.63
CCC	0.00	0.15	0.45	6.17	15.34	29.17	39.55	2.56	0.00	6.62
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10-year weighted-average										
AAA	77.41	19.83	1.97	0.22	0.58	0.00	0.00	0.00	0.00	0.00
AA	59.15	29.57	7.62	2.13	1.22	0.30	0.00	0.00	0.00	0.00

Table 25

European CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
A	21.16	25.53	29.06	11.71	6.06	3.24	0.28	2.96	0.00	0.00
BBB	1.39	3.74	11.11	35.90	14.21	16.45	14.64	1.71	0.00	0.85
BB	0.00	0.00	0.00	7.87	26.54	28.70	27.16	3.70	0.00	6.02
B	0.00	0.00	0.00	0.00	28.00	20.00	48.00	0.00	0.00	4.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. Source: S&P Global Fixed Income Research.

Table 26

European CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
2018											
AAA	51.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.35
AA	1.79	64.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.33
A	0.00	0.87	64.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.78
BBB	0.00	0.00	0.86	59.48	0.00	0.00	0.00	0.00	0.00	0.00	39.66
BB	0.00	0.00	0.00	0.00	59.32	0.00	0.00	0.00	0.00	0.00	40.68
B	0.00	0.00	0.00	0.00	0.00	59.63	0.00	0.00	0.00	0.00	40.37
CCC	0.00	0.00	0.00	0.00	0.00	10.00	10.00	0.00	0.00	30.00	50.00
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	0.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average											
AAA	66.09	8.90	5.06	0.45	0.07	0.00	0.00	0.00	0.00	0.00	19.43
AA	12.13	68.08	3.52	2.88	0.61	0.00	0.00	0.00	0.00	0.00	12.78
A	2.48	13.62	65.35	3.77	4.80	0.60	0.39	0.00	0.00	0.00	8.99
BBB	0.08	2.27	9.57	67.25	5.04	3.74	2.64	0.00	0.00	0.00	9.40
BB	0.00	0.05	1.44	10.43	68.16	4.91	6.30	0.00	0.00	0.00	8.71
B	0.00	0.00	0.19	1.60	14.49	60.77	8.65	0.00	0.00	0.00	14.30
CCC	0.00	0.00	0.00	0.34	3.24	18.23	66.55	1.57	0.00	1.68	8.39
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.57	0.00	17.86	28.57
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average											
AAA	40.96	18.96	9.43	0.67	0.22	0.00	0.00	0.00	0.00	0.00	29.76
AA	16.24	41.86	7.51	5.14	0.97	0.00	0.04	0.00	0.00	0.00	28.24

Table 26

European CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
A	5.50	20.32	36.76	7.75	9.32	0.99	0.59	0.14	0.00	0.00	18.65
BBB	0.49	4.10	14.12	40.16	9.62	7.77	5.03	0.09	0.00	0.00	18.62
BB	0.05	0.29	2.94	16.62	41.52	8.24	12.21	0.05	0.00	0.00	18.09
B	0.00	0.10	0.42	3.77	23.38	32.39	14.36	0.00	0.00	0.00	25.58
CCC	0.00	0.00	0.11	0.57	5.88	26.24	42.99	1.47	0.00	3.62	19.12
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.46	0.00	15.38	46.15
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average											
AAA	26.48	31.28	11.32	0.61	0.41	0.00	0.00	0.00	0.00	0.00	29.90
AA	14.56	25.88	12.36	5.68	0.97	0.04	0.04	0.00	0.00	0.00	40.48
A	7.90	17.51	20.31	13.56	11.04	1.14	0.62	0.19	0.00	0.00	27.74
BBB	1.21	6.32	12.17	23.00	14.64	10.55	6.55	0.19	0.00	0.00	25.37
BB	0.16	0.94	4.60	15.27	26.20	11.87	16.32	0.10	0.00	0.00	24.53
B	0.00	0.35	1.04	6.13	20.72	22.57	13.66	0.00	0.00	0.00	35.53
CCC	0.00	0.00	0.23	1.17	7.73	20.96	34.19	1.64	0.00	5.15	28.92
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.74	0.00	8.70	69.57
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average											
AAA	19.96	39.42	10.16	0.27	0.27	0.00	0.00	0.00	0.00	0.00	29.93
AA	12.55	16.73	15.72	4.90	0.68	0.04	0.00	0.00	0.00	0.00	49.39
A	7.92	12.79	12.74	18.22	10.25	1.07	0.36	0.25	0.00	0.00	36.40
BBB	2.02	6.81	8.30	12.99	18.32	11.75	6.86	0.30	0.00	0.00	32.64
BB	0.39	1.62	5.75	12.12	16.42	13.91	19.27	0.17	0.00	0.00	30.34
B	0.00	0.65	1.05	6.67	16.60	16.47	11.24	0.26	0.00	0.13	46.93
CCC	0.00	0.00	0.38	1.66	8.79	16.69	25.99	1.66	0.00	5.99	38.85
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average											
AAA	19.82	42.18	6.93	0.05	0.10	0.00	0.00	0.00	0.00	0.00	30.93
AA	9.77	13.67	17.09	3.32	0.53	0.00	0.00	0.00	0.00	0.00	55.61
A	7.90	6.62	11.85	20.76	7.96	1.11	0.17	0.33	0.00	0.00	43.29
BBB	2.89	5.46	3.96	9.90	19.64	12.25	7.28	0.43	0.00	0.00	38.20
BB	0.61	3.27	5.63	6.60	11.02	15.81	20.71	0.24	0.00	0.00	36.10
B	0.16	0.63	1.56	7.20	12.99	9.70	7.82	0.63	0.00	0.63	58.69
CCC	0.00	0.15	0.30	2.71	10.08	12.93	18.50	1.05	0.00	6.62	47.67
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00

Table 26

European CLO Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10-year weighted-average											
AAA	4.96	1.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	93.15
AA	8.54	3.51	1.07	0.30	0.00	0.00	0.00	0.00	0.00	0.00	86.59
A	3.10	5.50	4.80	2.96	1.27	1.13	0.00	0.28	0.00	0.00	80.96
BBB	0.11	0.53	2.14	4.59	4.17	3.95	4.91	0.43	0.00	0.85	78.31
BB	0.00	0.00	0.00	1.39	5.25	6.79	10.96	1.70	0.00	6.02	67.90
B	0.00	0.00	0.00	0.00	8.00	4.00	20.00	0.00	0.00	4.00	64.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Source: S&P Global Fixed Income Research.

Table 27

European CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
2018										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	22.22	77.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	5.26	10.53	84.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.00	0.00	4.00	96.00	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.00	7.14	89.29	3.57	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
CCC	0.00	0.00	0.00	0.00	0.00	10.00	60.00	0.00	0.00	30.00
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average										
AAA	83.38	10.27	5.76	0.51	0.08	0.00	0.00	0.00	0.00	0.00
AA	16.53	75.53	3.99	3.26	0.69	0.00	0.00	0.00	0.00	0.00
A	3.70	15.79	69.80	4.22	5.38	0.67	0.43	0.00	0.00	0.00
BBB	0.37	2.75	11.30	72.78	5.60	4.15	2.99	0.05	0.00	0.00
BB	0.16	0.26	1.61	12.34	72.82	5.71	7.05	0.05	0.00	0.00
B	0.00	0.00	0.23	2.37	18.19	68.47	10.73	0.00	0.00	0.00
CCC	0.00	0.00	0.00	0.45	3.36	19.02	73.94	1.57	0.00	1.68

Table 27

European CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82.14	0.00	17.86
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average										
AAA	67.11	21.47	10.38	0.80	0.24	0.00	0.00	0.00	0.00	0.00
AA	30.12	55.04	8.14	5.58	1.09	0.00	0.04	0.00	0.00	0.00
A	9.35	24.95	45.35	8.43	10.03	1.11	0.63	0.15	0.00	0.00
BBB	1.56	6.14	17.67	49.98	10.44	8.36	5.67	0.19	0.00	0.00
BB	0.42	0.89	3.84	21.05	50.58	9.84	13.21	0.16	0.00	0.00
B	0.00	0.12	0.46	5.34	29.12	48.03	16.94	0.00	0.00	0.00
CCC	0.00	0.00	0.11	0.90	7.01	30.09	56.33	1.92	0.00	3.62
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84.62	0.00	15.38
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average										
AAA	51.73	34.78	12.25	0.81	0.43	0.00	0.00	0.00	0.00	0.00
AA	38.41	41.32	13.00	6.06	1.13	0.04	0.04	0.00	0.00	0.00
A	17.27	24.14	30.06	14.44	11.85	1.29	0.65	0.30	0.00	0.00
BBB	3.73	10.08	17.30	34.13	15.51	11.29	7.61	0.34	0.00	0.00
BB	0.76	2.24	6.55	22.39	36.54	13.93	17.31	0.27	0.00	0.00
B	0.00	0.37	1.47	9.40	29.67	41.64	17.46	0.00	0.00	0.00
CCC	0.00	0.00	0.23	1.99	10.07	29.04	51.17	2.34	0.00	5.15
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91.30	0.00	8.70
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average										
AAA	43.98	43.89	11.18	0.50	0.46	0.00	0.00	0.00	0.00	0.00
AA	43.12	34.29	16.32	5.24	0.95	0.09	0.00	0.00	0.00	0.00
A	23.23	21.46	22.92	19.17	11.09	1.25	0.42	0.47	0.00	0.00
BBB	7.38	12.24	14.52	24.89	19.22	12.75	8.55	0.46	0.00	0.00
BB	1.26	3.61	9.22	21.47	27.82	16.14	20.15	0.34	0.00	0.00
B	0.13	1.21	2.28	12.20	28.95	37.67	17.16	0.27	0.00	0.13
CCC	0.00	0.00	0.38	3.44	12.36	29.55	45.61	2.68	0.00	5.99
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average										
AAA	42.91	48.17	8.14	0.29	0.49	0.00	0.00	0.00	0.00	0.00
AA	45.64	31.76	17.88	3.75	0.88	0.10	0.00	0.00	0.00	0.00

Table 27

European CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
A	27.31	17.29	22.02	22.07	8.95	1.41	0.28	0.68	0.00	0.00
BBB	10.82	12.01	10.22	22.12	20.82	13.79	9.63	0.59	0.00	0.00
BB	2.51	5.82	10.78	17.21	22.96	18.31	21.98	0.43	0.00	0.00
B	0.32	2.37	3.63	14.38	27.49	33.33	16.90	0.95	0.00	0.63
CCC	0.00	0.15	0.45	6.17	15.34	29.17	39.55	2.56	0.00	6.62
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10-year weighted-average										
AAA	77.41	19.83	1.97	0.22	0.58	0.00	0.00	0.00	0.00	0.00
AA	59.15	29.57	7.62	2.13	1.22	0.30	0.00	0.00	0.00	0.00
A	21.16	25.53	29.06	11.71	6.06	3.24	0.28	2.96	0.00	0.00
BBB	1.39	3.74	11.11	35.90	14.21	16.45	14.64	1.71	0.00	0.85
BB	0.00	0.00	0.00	7.87	26.54	28.70	27.16	3.70	0.00	6.02
B	0.00	0.00	0.00	0.00	28.00	20.00	48.00	0.00	0.00	4.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. Source: S&P Global Fixed Income Research.

Table 28

European CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
2018											
AAA	7.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	92.73
AA	11.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	88.89
A	0.00	5.26	5.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	89.47
BBB	0.00	0.00	4.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	92.00
BB	0.00	0.00	0.00	0.00	10.71	0.00	0.00	0.00	0.00	0.00	89.29
B	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
CCC	0.00	0.00	0.00	0.00	0.00	10.00	10.00	0.00	0.00	30.00	50.00
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	0.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average											
AAA	65.43	10.07	5.72	0.51	0.08	0.00	0.00	0.00	0.00	0.00	18.19

Table 28

European CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
AA	13.73	67.40	3.99	3.26	0.69	0.00	0.00	0.00	0.00	0.00	10.93
A	2.78	15.12	64.28	4.22	5.38	0.67	0.43	0.00	0.00	0.00	7.11
BBB	0.09	2.52	10.50	66.39	5.60	4.15	2.94	0.00	0.00	0.00	7.80
BB	0.00	0.05	1.61	11.62	66.96	5.50	7.05	0.00	0.00	0.00	7.21
B	0.00	0.00	0.23	1.92	17.40	56.84	10.40	0.00	0.00	0.00	13.22
CCC	0.00	0.00	0.00	0.34	3.24	18.23	66.55	1.57	0.00	1.68	8.39
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.57	0.00	17.86	28.57
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average											
AAA	41.55	20.55	10.22	0.72	0.24	0.00	0.00	0.00	0.00	0.00	26.72
AA	17.52	42.60	8.10	5.54	1.05	0.00	0.04	0.00	0.00	0.00	25.16
A	5.91	21.75	36.77	8.33	10.03	1.07	0.63	0.15	0.00	0.00	15.36
BBB	0.52	4.39	15.02	40.29	10.30	8.31	5.38	0.09	0.00	0.00	15.68
BB	0.05	0.32	3.16	17.79	41.21	8.84	13.11	0.05	0.00	0.00	15.47
B	0.00	0.12	0.46	4.18	25.87	30.74	15.89	0.00	0.00	0.00	22.74
CCC	0.00	0.00	0.11	0.57	5.88	26.24	42.99	1.47	0.00	3.62	19.12
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.46	0.00	15.38	46.15
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average											
AAA	26.98	32.89	11.91	0.64	0.43	0.00	0.00	0.00	0.00	0.00	27.15
AA	15.23	26.33	12.92	5.94	1.01	0.04	0.04	0.00	0.00	0.00	38.49
A	8.26	18.22	20.41	14.19	11.55	1.19	0.65	0.20	0.00	0.00	25.34
BBB	1.26	6.59	12.60	23.12	15.27	11.00	6.83	0.19	0.00	0.00	23.12
BB	0.16	0.98	4.81	15.89	26.05	12.40	17.04	0.11	0.00	0.00	22.56
B	0.00	0.37	1.10	6.47	21.86	21.86	14.41	0.00	0.00	0.00	33.94
CCC	0.00	0.00	0.23	1.17	7.73	20.96	34.19	1.64	0.00	5.15	28.92
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.74	0.00	8.70	69.57
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average											
AAA	20.53	40.56	10.45	0.27	0.27	0.00	0.00	0.00	0.00	0.00	27.92
AA	12.86	17.14	16.10	5.02	0.69	0.04	0.00	0.00	0.00	0.00	48.14
A	8.13	13.13	13.02	18.70	10.52	1.09	0.36	0.26	0.00	0.00	34.79
BBB	2.07	6.98	8.50	13.20	18.77	12.04	7.03	0.30	0.00	0.00	31.11
BB	0.40	1.66	5.90	12.42	16.66	14.25	19.75	0.17	0.00	0.00	28.79
B	0.00	0.67	1.07	6.84	17.02	16.49	11.53	0.27	0.00	0.13	45.98
CCC	0.00	0.00	0.38	1.66	8.79	16.69	25.99	1.66	0.00	5.99	38.85

Table 28

European CLO 1.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Five-year weighted-average											
AAA	20.09	42.76	7.02	0.05	0.10	0.00	0.00	0.00	0.00	0.00	29.99
AA	9.89	13.83	17.29	3.36	0.54	0.00	0.00	0.00	0.00	0.00	55.09
A	8.00	6.70	11.99	21.00	8.05	1.13	0.17	0.34	0.00	0.00	42.62
BBB	2.92	5.52	4.00	10.01	19.85	12.39	7.36	0.43	0.00	0.00	37.53
BB	0.61	3.31	5.70	6.67	11.15	15.98	20.94	0.24	0.00	0.00	35.39
B	0.16	0.63	1.58	7.27	13.11	9.79	7.90	0.63	0.00	0.63	58.29
CCC	0.00	0.15	0.30	2.71	10.08	12.93	18.50	1.05	0.00	6.62	47.67
CC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10-year weighted-average											
AAA	4.96	1.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	93.15
AA	8.54	3.51	1.07	0.30	0.00	0.00	0.00	0.00	0.00	0.00	86.59
A	3.10	5.50	4.80	2.96	1.27	1.13	0.00	0.28	0.00	0.00	80.96
BBB	0.11	0.53	2.14	4.59	4.17	3.95	4.91	0.43	0.00	0.85	78.31
BB	0.00	0.00	0.00	1.39	5.25	6.79	10.96	1.70	0.00	6.02	67.90
B	0.00	0.00	0.00	0.00	8.00	4.00	20.00	0.00	0.00	4.00	64.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Source: S&P Global Fixed Income Research.

Table 29

European CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
2018										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00

Table 29

European CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.00	1.19	98.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.00	0.00	1.25	98.75	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.00	0.43	99.57	0.00	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Two-year weighted-average										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.00	3.21	96.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.00	0.00	3.36	96.64	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.00	1.43	98.57	0.00	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.00	7.53	92.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.00	0.00	7.87	92.13	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.00	3.70	96.30	0.00	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average										
AAA	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 29

European CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR'-Adjusted (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D
AA	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A	0.00	8.00	92.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BBB	0.00	0.00	8.33	91.67	0.00	0.00	0.00	0.00	0.00	0.00
BB	0.00	0.00	0.00	4.65	95.35	0.00	0.00	0.00	0.00	0.00
B	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Securities with ratings that migrated to 'NR' over the period are classified based on the rating prior to 'NR'. Source: S&P Global Fixed Income Research.

Table 30

European CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
2018											
AAA	70.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.13
AA	0.00	77.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.70
A	0.00	0.00	76.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.96
BBB	0.00	0.00	0.00	74.73	0.00	0.00	0.00	0.00	0.00	0.00	25.27
BB	0.00	0.00	0.00	0.00	74.44	0.00	0.00	0.00	0.00	0.00	25.56
B	0.00	0.00	0.00	0.00	0.00	75.58	0.00	0.00	0.00	0.00	24.42
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
One-year weighted-average											
AAA	71.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.87
AA	0.00	73.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.74
A	0.00	1.19	74.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.60
BBB	0.00	0.00	1.25	75.00	0.00	0.00	0.00	0.00	0.00	0.00	23.75
BB	0.00	0.00	0.00	0.43	78.26	0.00	0.00	0.00	0.00	0.00	21.30
B	0.00	0.00	0.00	0.00	0.00	80.34	0.00	0.00	0.00	0.00	19.66
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 30

European CLO 2.0 Rating Transitions, 2018 And Multi-Year Averages, 'NR' Included (%) (cont.)

From/to	AAA	AA	A	BBB	BB	B	CCC	CC	C	D	NR
Two-year weighted-average											
AAA	33.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.03
AA	0.00	32.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.49
A	0.00	1.28	36.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.18
BBB	0.00	0.00	1.34	38.26	0.00	0.00	0.00	0.00	0.00	0.00	60.40
BB	0.00	0.00	0.00	0.71	45.71	0.00	0.00	0.00	0.00	0.00	53.57
B	0.00	0.00	0.00	0.00	0.00	47.83	0.00	0.00	0.00	0.00	52.17
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Three-year weighted-average											
AAA	16.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83.33
AA	0.00	15.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84.07
A	0.00	2.15	18.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.57
BBB	0.00	0.00	2.25	20.22	0.00	0.00	0.00	0.00	0.00	0.00	77.53
BB	0.00	0.00	0.00	1.23	29.63	0.00	0.00	0.00	0.00	0.00	69.14
B	0.00	0.00	0.00	0.00	0.00	35.56	0.00	0.00	0.00	0.00	64.44
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Four-year weighted-average											
AAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
AA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
A	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.00
BBB	0.00	0.00	0.00	4.17	0.00	0.00	0.00	0.00	0.00	0.00	95.83
BB	0.00	0.00	0.00	0.00	6.98	0.00	0.00	0.00	0.00	0.00	93.02
B	0.00	0.00	0.00	0.00	0.00	15.79	0.00	0.00	0.00	0.00	84.21
CCC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A--Not applicable. Source: S&P Global Fixed Income Research.

Related Criteria And Research

Related Criteria

- Request For Comment: Global Methodology And Assumptions For CLOs And Corporate CDOs, April 11, 2019
- Global Methodologies And Assumptions For Corporate Cash Flow And Synthetic CDOs, Aug. 8, 2016
- Credit Stability Criteria, May 3, 2010
- Understanding Standard & Poor's Rating Definitions, June 3, 2009

Related Research

- 2018 Annual Global Corporate Default And Rating Transition Study, April 9, 2019
- 2018 Annual Global Structured Finance Default Study And Rating Transitions, March 28, 2019

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