
Collateralized Loan Obligations – Stress Testing U.S. Insurers’ Year-End 2019 Exposure

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Executive Summary

- Collateralized Loan Obligations (CLOs) continue to be a growing asset class for U.S. insurers; exposure increased to about \$158 billion at year-end 2019, having increased 17.5% from about \$130 billion at year-end 2018. CLOs are a focus of regulatory concern, particularly as the underlying bank loans are experiencing negative rating actions as a result of the impact on certain industries from the economic disruption caused by COVID-19.
- The NAIC Capital Markets Bureau (CMB) and Structured Securities Group (SSG) completed a series of stress tests of insurer-owned CLOs. The Stress Thesis for the NAIC’s stress testing of U.S. insurer CLO exposure at year-end 2019 is consistent with that of the previous Stress Thesis (i.e., for year-end 2018 exposure), in that the consequences of less stringent underwriting on the underlying bank loan collateral will result in substantially lower recovery rates during the next recession. In addition, the year-end 2019 U.S. insurer CLO exposure stress testing included additional stresses taking into account the economic impact of COVID-19.
- Stress test results for year-end 2019 showed that:
 - Losses on “normal” CLO tranches—those with regular promises of principal and interest—reached A-rated tranches, even under the worst-case scenario.
 - For “atypical” CLO tranches—those that have unusual payment promises, such as equity tranches and Combo Notes—losses reached AA-rated securities.
- Based on the NAIC’s stress test results, U.S. insurer investments in CLOs as a whole do not appear to be a significant risk. However, significant CLO exposures relative to capital and surplus (C&S) and concentrated exposures to Atypical securities like Combo Notes and low-rated tranches are potential risks, particularly in a stressed environment.

While they are historically a very small portion of total U.S. insurer cash and invested assets (about 2% of the total), CLOs offer an attractive yield alternative to traditional bond investments. U.S. insurer exposure to CLOs at year-end 2019 was about \$158 billion, an increase from about \$130 billion at year-end 2018.

Due in part to the COVID-19 pandemic, new issuance of CLOs since the beginning of 2020 has slowed, with year-to-date (YTD) volume through the end of May 2020 at \$27 billion according to S&P Global, compared to \$54.9 billion in new issuance for the first five months ended 2019. In addition, negative rating actions have been taken on more than 1,000 ratings on structured finance tranches according to S&P Global as of mid-May 2020, due to the impact from COVID-19 as well as oil price volatility, a large proportion of which have been on CLO below investment grade tranches. Negative rating actions have included downgrades and placing ratings on negative outlook or Credit Watch Negative.

Please see the NAIC Capital Markets Bureau special report titled [“The Rise in the U.S. Insurance Industry’s Exposure to Collateralized Loan Obligations as of Year-End 2019”](#) published in May 2020 for additional detail on CLOs and U.S. insurers’ CLO exposure as of year-end 2019.

CLO Stress Test Methodology

The NAIC SSG, along with the CMB, performed a series of stress tests on U.S. insurer holdings of CLOs as of year-end 2019. It included three scenarios from the previous stress testing on U.S. insurers’ year-end 2018 CLO exposure, each with increasing conservatism (Scenarios A, B and C). Furthermore, two more scenarios (Scenarios D and E) to reflect stresses due to the economic impact of COVID-19 were added. (See Table 1.) Note that a probability of occurrence was not assigned to any of the stress test scenarios; these scenarios are not meant to value the securities. The goal was to measure the potential impact of CLO distress on insurance company balance sheets.

Table 1: NAIC CLO Stress Test – May 2020 Update Summary

	Initial Runs	Year-End 2019 Runs	May 2020 Runs
Scenarios	A, B, C	A, B, C	C, D, E
CLOs Analyzed	Held at YE2018	Held at YE2019	Held at YE2019
Underlying Portfolio	As of June 2019	As of December 2019	As of March 2020

Our Stress Thesis is that **the consequences of less stringent underwriting on the underlying bank loan collateral will result in substantially lower recovery rates during the next recession.** Specifically, the stress tests aim to show how CLOs would fare if bank loan recoveries deteriorated from historical norms as compared to unsecured debt recoveries. In addition, the recovery stress scenario was run under both a historical and a moderately stressful default environment.

The NAIC endeavored to model all tranches of BSL CLOs held by U.S. insurers at year-end 2019. Excluded were: CLOs securitized by middle market loans and commercial real estate; collateralized debt obligations (CDOs) collateralized by asset-backed securities (ABS) and trust preferred securities (TruPs); and collateralized bond obligations (CBOs) and resecuritizations.

A full report on the [CLO Stress Tests Methodology](#) may be found on the NAIC’s CMB web page.

Default Rates

The NAIC CMB and SSG used Moody’s Analytics CDONet to model the CLO waterfalls. CDONet publishes the underlying bank loan portfolios, and the NAIC CMB and SSG used the reported collateral and ratings in their stress testing analysis. Base default rate data was obtained from Moody’s Annual Default Study published in 2019 (Moody’s Study).¹ The stress tests used 10-year cohort data for all cohorts with at least 10 years (1970–2009), and an issuer-weighted average term structure of default rates was calculated for each broad rating category (e.g., Baa, Ba, etc.). In addition, a weighted average standard deviation (σ) was calculated for each tenor.

Two of the original default scenarios were retained for the stress tests: “Historical” and “Historical + 1σ .” For Scenarios A, B and C, rating category default rates were scaled by historical ratios to produce rating-specific default vectors as shown in Table 2 and Table 3.

Table 2: “Historical” Default Vectors

	1	2	3	4	5	6	7	8	9	10
Ba1	0.6%	1.8%	3.1%	4.4%	5.8%	7.2%	8.2%	9.0%	9.8%	10.7%
Ba2	1.0%	2.4%	3.9%	5.4%	6.8%	8.0%	9.1%	10.4%	11.8%	13.4%
Ba3	1.8%	4.8%	8.0%	11.6%	14.6%	17.5%	20.0%	22.4%	24.7%	26.7%
B1	2.7%	6.7%	10.9%	14.7%	18.5%	21.9%	25.3%	28.2%	30.8%	32.9%
B2	4.0%	9.8%	15.1%	19.7%	23.4%	26.8%	29.7%	32.1%	34.3%	36.4%
B3	6.5%	13.6%	20.2%	25.7%	30.4%	34.4%	37.9%	40.9%	43.5%	45.5%
Caa	12.8%	23.1%	30.9%	37.1%	41.7%	45.4%	48.2%	51.0%	53.6%	55.8%
Ca-C	49.8%	61.5%	67.6%	70.8%	71.5%	71.5%	72.5%	73.4%	73.4%	73.4%

Table 3: “Historical + 1σ ” Default Vectors

	1	2	3	4	5	6	7	8	9	10
Ba1	1.1%	3.4%	5.4%	7.4%	9.5%	11.3%	12.5%	13.3%	14.1%	15.0%
Ba2	1.9%	4.5%	6.8%	9.0%	11.2%	12.6%	13.9%	15.4%	17.1%	18.7%
Ba3	3.5%	9.0%	14.0%	19.4%	23.8%	27.5%	30.6%	33.4%	35.6%	37.4%
B1	4.7%	10.7%	16.4%	21.1%	25.3%	28.8%	32.1%	35.2%	38.3%	40.9%
B2	7.1%	15.6%	22.7%	28.3%	32.0%	35.2%	37.7%	40.0%	42.7%	45.3%
B3	11.5%	21.7%	30.4%	36.8%	41.5%	45.2%	48.1%	51.1%	54.1%	56.5%
Caa	20.1%	32.7%	41.7%	47.3%	51.3%	53.7%	55.7%	58.2%	60.2%	62.5%
Ca-C	77.9%	87.3%	91.0%	91.0%	91.0%	91.0%	91.0%	91.0%	91.0%	91.0%

¹ Moody’s, Corporates – Global Annual Default Study: Defaults Will Rise Modestly in 2019 Amid Higher Volatility, Excel Supplement, 2019.

Certain Ca-C default rates (as highlighted in yellow in Table 2 and Table 3) were adjusted to ensure that marginal defaults rates remained non-negative.

Scenarios D and E are two new COVID-19 scenarios introduced in this CLO Stress Test update. Scenario D is based on Moody’s U.S. “Similar to 2008” forecast (Table 4), and Scenario E is based on Moody’s U.S. “Severe Recession” scenario (Table 5).² Since the Moody’s forecasts covered only 12 months, we extended them to 10 years. And because the timing of the default spike is implicit in the forecast, we did not have to make simplifying assumptions regarding the default path. Specifically, the averaging of default rates (as completed with Scenarios A, B and C) is not required. There were, however, two constraints in generating the whole 10-year curve: The first-year default rate must equal the Moody’s forecast, and the 10-year cumulative defaults should be about +1 σ for Scenario D and about +2 σ for Scenario E.

Additionally, the Moody’s forecasts cover speculative grade (SG, or Ba1-C credit ratings) as a whole, and our 10-year default curve needed to be extended to specific ratings. We followed the same ratio methodology described above (for Scenarios A, B and C) to map SG defaults to individual ratings. Under this approach, all Ca-C default rates (highlighted in yellow) were greater than 100% and were capped at 100%. Please note that as Moody’s published an updated Global Annual Default Study in February 2020, we added 2010 cohort default experience data to our Q1 2020 runs based on this updated study.

Table 4: “Similar to 2008” Default Vectors

	1	2	3	4	5	6	7	8	9	10
Ba1	1.9%	4.1%	5.7%	7.0%	7.9%	8.9%	9.6%	10.2%	10.7%	11.4%
Ba2	3.2%	5.6%	7.4%	8.8%	9.9%	10.8%	11.7%	12.7%	14.0%	15.4%
Ba3	6.1%	11.1%	14.8%	18.2%	20.1%	22.1%	24.1%	26.0%	27.8%	29.7%
B1	8.8%	15.5%	19.9%	23.0%	25.6%	28.0%	30.6%	32.8%	34.8%	36.5%
B2	13.6%	22.7%	27.9%	31.4%	33.4%	35.4%	37.1%	38.5%	40.0%	41.6%
B3	21.3%	30.8%	36.3%	39.6%	41.9%	44.1%	45.9%	47.7%	49.4%	50.7%
Caa	35.0%	44.5%	48.0%	50.1%	51.4%	52.5%	53.8%	55.4%	57.1%	58.6%
Ca-C	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 5: “Severe Recession” Default Vectors

	1	2	3	4	5	6	7	8	9	10
Ba1	2.2%	4.7%	6.5%	7.9%	9.0%	10.2%	11.0%	11.8%	12.5%	13.4%
Ba2	3.8%	6.4%	8.3%	10.0%	11.3%	12.4%	13.5%	14.7%	16.3%	18.1%
Ba3	7.2%	12.7%	16.6%	20.6%	22.9%	25.3%	27.8%	30.1%	32.4%	34.8%
B1	10.4%	17.6%	22.3%	26.0%	29.2%	32.1%	35.2%	38.0%	40.6%	42.7%
B2	16.0%	25.8%	31.4%	35.5%	38.0%	40.6%	42.8%	44.6%	46.5%	48.7%
B3	25.2%	35.1%	40.8%	44.8%	47.8%	50.5%	52.8%	55.3%	57.6%	59.3%
Caa	41.4%	50.6%	53.8%	56.6%	58.5%	60.2%	62.0%	64.2%	66.5%	68.6%
Ca-C	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

² Moody’s, Default Trends – Global Default scenarios as coronavirus-induced economic turmoil intensifies, March 27, 2020.

Recovery Rates

As in the NAIC’s previous stress testing, recovery rate data was obtained from Exhibit 7 of the Moody’s Study, which provides historical recovery rates for nine categories of corporate debt recoveries, ranging from first lien bank loans down to junior subordinated bonds. A portion of the defaulted amount of underlying bank loan collateral was modeled to recover at a set of recovery rate assumptions. The NAIC Stress Thesis expects the underlying bank loans to perform similar to unsecured debt in the next market downturn; other asset types in the portfolio were assumed to perform similar to their next worse category—the “stepdown” scenario.

CDONet labels the underlying collateral as senior secured bank loan, second lien bank loan, and senior unsecured bond. We also added an “other” category for any debt not covered by the three aforementioned categories. (See Table 6.)

Table 6: Mapping Recovery Rates

Collateral Label	Historical Priority Position	Stepdown Priority Position	Notes
Senior Secured Loan	1st Lien Bank Loan	Sr. Unsecured Bank Loan	Consistent with our Stress Thesis
Second Lien Loan	2nd Lien Bank Loan	Sr. Subordinated Bond	Lowest recovery avail.
Senior Unsecured Bond	Sr. Unsecured Bond	Subordinated Bond	Consistent with the Stress Thesis
Other	Jr. Subordinated Bond	Sr. Subordinated Bond	Lowest recovery avail.

Since the bulk of CLO collateral are classified as senior secured loans, the assumed recovery rate was reduced from 64% to 40% in the stepdown scenario. Recoveries were assumed to occur six months after default.

Stress Test Scenarios

Five scenarios were run: A, B, C, D and E, with varying default and recovery rate assumptions as shown in Table 7:

Table 7: Scenarios of Stress Testing

Scenario	Default Rate	Recovery Rate
A	Historical	Historical
B	Historical	Stepdown
C	Stressed + 1 σ	Stepdown
D	Similar to 2008	Stepdown
E	Severe Recession	Stepdown

Default Curve Shape and Results

Scenarios D and E differ significantly from Scenarios A, B and C in the shape of the default curve. Scenarios A, B and C all have fairly constant marginal default rates. Scenarios D and E, on the other hand, front-load the defaults, which represents a more accurate default curve shape in the current environment.

Nevertheless, changing the shape of the default curve creates loss results, which may not be intuitive to those not familiar with CLOs. As described above, overcollateralization (O/C) tests divert excess interest from equity to pay down more senior tranches. Front-loaded default scenarios divert the excess interest earlier and result in lower losses for some tranches even when the total amount of portfolio defaults increase. Conversely, the operation of the O/C tests hurts the performance of junior and equity tranches.

A CLO manager's actions can undermine this mechanic through "par trading" as described in our methodology. For this reason, the potential actions of the CLO manager are more relevant in Scenarios D and E. Our results assume credit-neutral behavior on the part of CLO managers.

As of June 5, 2020, about 23% of CLOs rated by S&P Global, that were included in their S&P CLO Insights 2020 Index, were failing their most junior O/C.

Stress Test Results

At the deal level, more than 1,200 unique transactions were analyzed, totaling about \$620 billion par value. Our analysis of the U.S. insurance industry's total CLO exposure resulted in four categories for the purposes of this report, as shown in Table 8.

Table 8: CLO Categories

Category	Description	Total \$bil BACV 2018	Total \$bil BACV 2019
Mapped and Modeled "Normal"	Security mapped and modeled; pays normal principal and interest.	\$95.1	\$117.1
Mapped and Modeled "Atypical"	Security mapped and modeled; atypical promises: primarily equity and Combo Notes.	\$1.0	\$1.4
Out Of Scope	Security can be modeled but is out of scope for our current project.	\$12.2	\$19.0
Need Information	More information is needed; includes CLO tickers and Combo Notes.	\$15.1	\$21.0

Mapped and Modeled

We were able to model \$119 billion of U.S. insurers' year-end 2019 CLO exposure (an increase from \$96.9 billion at year-end 2018), which was separated into two categories: Normal and Atypical. There were \$117.1 billion of Normal tranches, which pay regular promises of principal and interest, and \$1.4 billion of Atypical tranches. Atypical tranches have unusual payment promises, and they consist of mostly and Combo Note tranches.

Because we modeled as of the year-end 2019 reporting date, and because of the lull in refinancing related to the COVID-19 pandemic, we no longer need the "Ready to Map" category that was included in the NAIC CMB and SSG's previous stress tests.

Mapped and Modeled – Normal

The exposure to modeled Normal tranches increased by about 23% from \$95.9 billion at year-end 2018. Our analysis showed that the highest-rated Normal tranches that suffered losses were rated single A in our most conservative scenarios. Table 9 shows the losses by broad rating category, where only missed principal payments were counted as losses.

Table 9: Principal Losses (P Loss) on Normal Tranches

Lowest Rating	Mapped Exposure (\$ mil)	Scenario A Dec. 2019 P Loss	Scenario B Dec. 2019 P Loss	Scenario C Dec. 2019 P Loss	Scenario C March 2020 P Loss	Scenario D March 2020 P Loss	Scenario E March 2020 P Loss
AAA	52,411	-	-	-	-	-	-
AA	28,545	-	-	-	-	-	-
A	18,169	-	-	0.1%	-	-	0.4%
BBB	13,329	-	0.2%	20%	17%	19%	62%
BB	2,960	0.2%	46%	96%	95%	97%	99%
B	124	36%	95%	98%	98%	100%	100%
CCC	10	86%	100%	100%	100%	100%	100%

During periods of credit stress, some mezzanine tranches may not receive interest payments if a senior O/C test was triggered. This would not constitute a default; rather, the missed interest is capitalized. If the capitalized interest is not subsequently paid back to the mezzanine tranche, then the total loss may be greater than the book/adjusted carrying value (BACV) of the tranche. Table 10 presents the losses across the three scenarios when considering both missed principal and interest payments.

Table 10: Principal and Interest Losses (PI Loss) on Normal Tranches

Lowest Rating	Mapped Exposure (\$ mil)	Scenario A Dec. 2019 PI Loss	Scenario B Dec. 2019 PI Loss	Scenario C Dec. 2019 PI Loss	Scenario C March 2020 PI Loss	Scenario D March 2020 PI Loss	Scenario E March 2020 PI Loss
AAA	52,411	-	-	-	-	-	-
AA	28,545	-	-	-	-	-	-
A	18,169	-	-	0.1%	-	-	0.9%
BBB	13,329	-	0.2%	29%	25%	31%	82%
BB	2,960	0.5%	66%	142%	140%	148%	152%
B	124	62%	145%	155%	154%	161%	162%
CCC	10	91%	110%	112%	135%	139%	141%

Note that Scenario C tranche losses are lower in March 2020 than in December 2019. We performed a “deep dive” on several transactions and believe that this trend is primarily due to changing CLO portfolios. That is, it is likely that CLO managers took an opportunity to “clean up” their portfolios as a precaution to potential COVID-19 and oil-related rating actions. These actions were performed at a cost to the amount of cushion in the O/C tests. The lower cushion would trigger the O/C tests earlier in our modeling, and, as described above, be “credit positive” for the mezzanine tranches.

Mapped and Modeled – Atypical

The exposure to Atypical securities increased approximately 40% from \$1 billion at year-end 2018. For the year-end 2019 stress testing, we grouped a number of obligations into the Atypical category. (See Table 11.) These include securities that do not have a standard principal balance (e.g., equity) or have components that do not have a standard principal balance (e.g., Combo Notes).

Equity tranches have a notional balance and are not entitled to receive principal payments. In stressed environments, O/C tests cut off cash payments to equity holders. As a result, it is not possible to calculate a principal loss on these tranches. Combo Notes are a combination of equity tranches and other tranches within a capital structure, typically rated to a return of principal only. Combo Notes do have a principal balance, and all cash flows from the underlying securities are directed to their repayment.

Table 11: Principal Losses (P Loss) on Atypical Tranches

Lowest Rating	Mapped Exposure (\$ mil)	Scenario A Dec. 2019 P Loss	Scenario B Dec. 2019 P Loss	Scenario C Dec. 2019 P Loss	Scenario C March 2020 P Loss	Scenario D March 2020 P Loss	Scenario E March 2020 P Loss
AAA	95	-	-	-	-	-	-
AA	108	28%	28%	28%	28%	28%	29%
A	232	19%	19%	23%	20%	19%	18%
BBB	205	27%	38%	61%	60%	59%	75%
No Rating	739	91%	91%	91%	91%	91%	91%

Similar to year-end 2018 stress testing, we found that the risk on **rated** Combo Notes is not comparable with similarly rated Normal tranches. Rated Atypical tranches are particularly concerning, as they are susceptible to high losses in stress scenarios; however, they are concentrated in only a few companies.

Out of Scope

Tranches that were deemed “Out of Scope” for this project totaled \$19 billion, as shown in Table 12. This represents an increase from \$12.2 billion at year-end 2018, which was driven by the middle market CLO category.

Table 12: Out of Scope Categories

Category	Description	Total \$bil BACV 2018	Total \$bil BACV 2019
Collateralized Bond Obligations	Transactions classified as backed primarily by bonds - likely to include in the future.	\$1.4	\$2.8
Middle Market CLO	Transactions backed by middle market companies, with little available data. Will seek to find a data source for analysis.	\$10.0	\$14.8
Other & TruPs	Misc. categories, including resecuritizations and preferred stock.	\$0.8	\$1.4

Middle market CLOs are backed by loans to small and medium-sized companies. These loans have less publicly available information and may have materially different performance. For example, middle market loans have less liquidity, which may have a negative impact on recovery rates. Nevertheless, we are seeking a data source that will allow us to analyze these CLOs.

Need Information

CLO tranches for which we need information for stress testing increased by about 40% from \$15.1 billion at year-end 2018, to \$21 billion at year-end 2019. These tranches include those for which we do not have a CLO model available from our vendor, are a Combo Note where the underlying CLO is modeled but terms and conditions of the transaction are unknown, or the insurer identified the investment as a CLO but did not identify the relevant tranche.

Analysis of Stress Test Results

We conducted a survey among U.S. insurers and found that 841, with a total of about \$822 billion in C&S, held some amount of CLO tranches that we were able to model. Similar to last year’s stress testing results, we found that the losses on insurers’ CLO investments that we were able to model, even in the stressed scenarios, were highly concentrated.

To understand the impact of potential losses on insurers, we divided the principal loss (compare with Table 9) by each insurers’ year-end 2019 total C&S for three illustrative scenarios: Scenario A from December 2019, and Scenarios C and E from March 2020. For each scenario, the principal loss as a percentage of total C&S for each of the 841 insurers was sorted from highest to lowest, and then the insurer with the largest percentage loss was referenced as “Insurer 1,” the insurer with the second largest percentage loss was referenced as “Insurer 2” and so on until the smallest percentage loss, which was

referenced as “Insurer 841” (x-axis). Please note the difference in the scale of the y-axis in Charts 1, 2 and 3.

Chart 1 shows the distribution of losses as a percentage of C&S for December 2019’s Scenario A. Although the bulk of insurers show no losses, 50 of the 841 insurers experienced losses in this scenario. Four insurers, with combined C&S of about \$150 million, have double-digit losses. The losses are derived primarily from single-B rated CLO tranches.

Chart 1: Loss as a Percent of Capital and Surplus (C&S) in December 2019 by Insurer, Scenario A

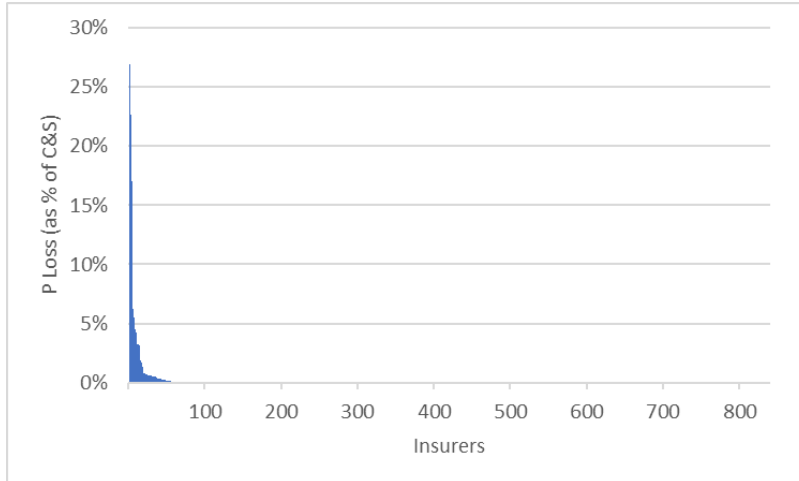


Chart 2 shows the distribution of losses as a percentage of C&S for March 2020’s Scenario C. Almost 190 insurers are expected to experience losses in this scenario, with 33 insurers experiencing double-digit losses. Four insurers, with a combined C&S of about \$185 million, exceeded 100% of C&S. These losses are primarily driven by the performance of the BB-rated CLO tranches held by U.S. insurers.

Chart 2: Loss as a Percent of Capital and Surplus (C&S) in March 2020 by Insurer, Scenario C

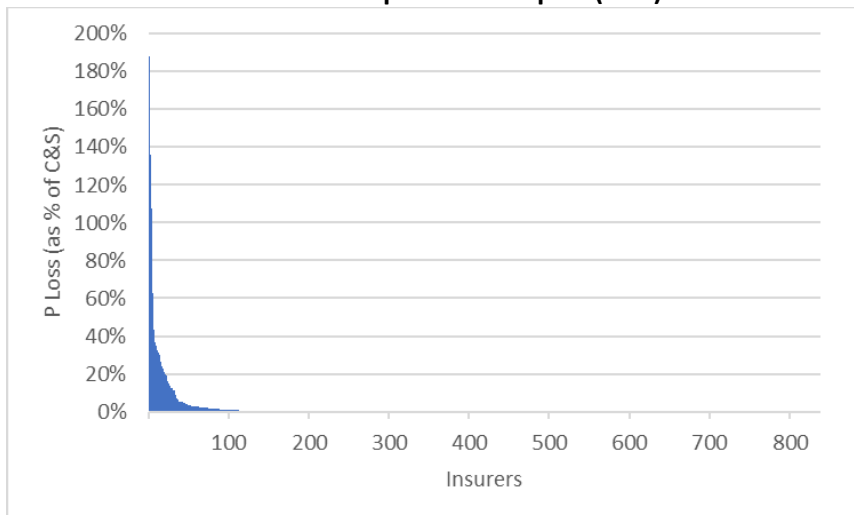
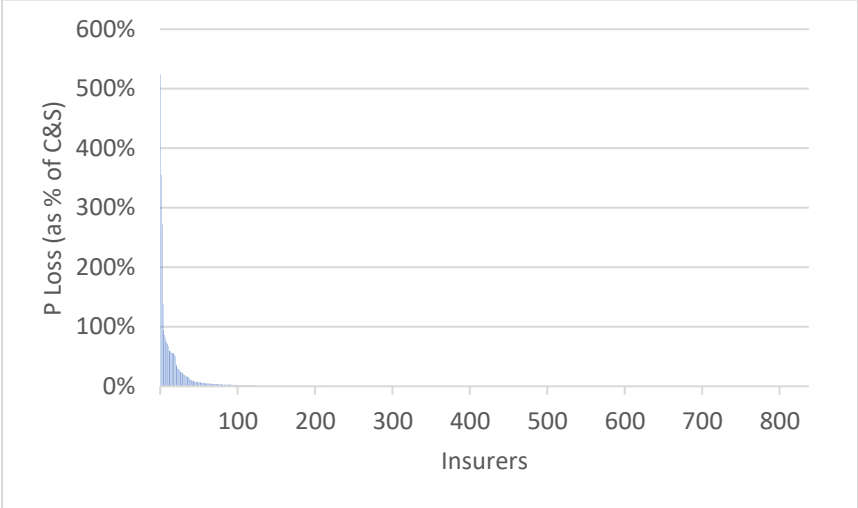


Chart 3 shows the distribution of losses as a percentage of C&S for March 2020 Scenario E, our most conservative scenario. The number of insurers expected to experience losses is the greatest in this scenario. The same four aforementioned insurers in the March 2020 Scenario C also have losses above 100% in Scenario E, and 41 insurers are projected to experience double-digit losses. However, note that the majority of insurers, or 778 insurers with a combined C&S of \$790 billion, are expected to experience losses of 5% or less.

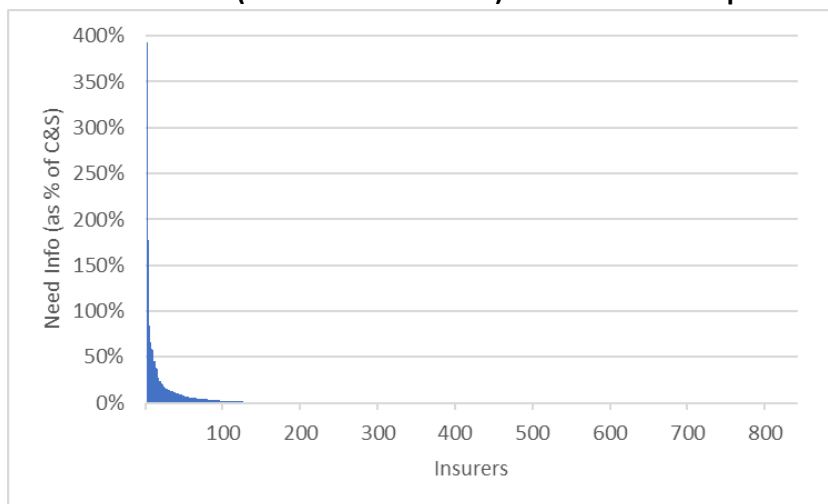
Chart 3: Loss as a Percent of Capital and Surplus in March 2020 by Insurer, Scenario E



That said, concern exists with the concentrated exposures to CLOs tranches that we cannot model—that is, for those CLOs in the “Need Information” category. A CLO may be categorized as such for several reasons. For example, we may not have a valid identifier reported, while others may be too new to have a model in place. Generally, the concern lies with the Atypical securities, either related to a broadly syndicated transaction or one that is bespoke.

Chart 4 shows the “Need Information” CLO tranches as a percentage of C&S. Note that these are not losses as the previous charts, but exposures. However, to the extent many of these are Atypical tranches and perform similarly to those we modeled, they can have an impact on the solvency of a few companies. Three companies have CLO exposures greater than 100% of C&S, and they have a total C&S of about \$3 billion between them.

Chart 4: Need Info (Year-End 2019 BACV) as a Percent of Capital and Surplus (C&S) by Insurer



Conclusion

The Stress Thesis for the NAIC’s modeling of U.S. insurer CLO investments as of year-end 2019 assumes that lower recovery rates are expected on the underlying bank loan portfolios in the next recession due to less stringent underwriting terms. In addition to the three scenarios that were included with the NAIC’s previous stress test modeling (of U.S. insurers’ year-end 2018 CLO investments), two more scenarios were added to reflect the impact of COVID-19 on the industry’s year-end 2019 CLO investments. As the NAIC SSG and CMB performed stress testing on U.S. insurer CLO investments—the majority of which are high credit quality based on credit ratings—year-end 2019 **results showed that Normal tranches rated AA and higher did not experience any losses under the five different scenarios tested.** In comparison, with the year-end 2018 stress test modeling, Normal CLO tranches rated A and higher did not experience any losses under the three scenarios tested.

Since U.S. insurer exposure to CLOs is relatively small, at about 2% of total cash and invested assets as of year-end 2019, and the vast bulk of these investments are rated single A or above, we do not believe that the CLO asset class currently presents a risk to the industry as a whole.

Nevertheless, our analysis also showed that a few insurers have concentrated investments in Combo Notes and low-rated tranches. Even though they tend to perform well during stable market conditions, significant losses may occur when the environment is stressed. Given the complexity and volatility of CLO investments in general, however, their exposure as a percent of total C&S is worth identifying, particularly for insurers with large exposures as a percentage of their total asset size.

The NAIC will continue to monitor U.S. insurer investments in CLOs and report as deemed appropriate.

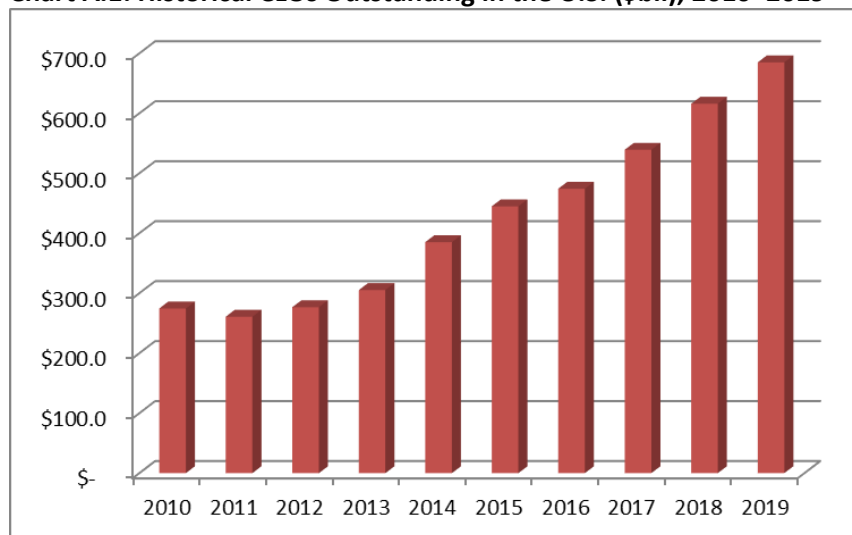
Appendix

Refresher on CLOs

CLOs are structured finance securities collateralized predominantly by a pool of below investment grade, first lien, senior secured, syndicated bank loans, with smaller allocations to other types of investments, such as middle market loans and second lien loans. CLO debt issued to investors consists of several tranches, or layers, with different/sequential payment priorities and, in turn, differing credit quality and credit ratings. The senior-most tranche is the most protected and, therefore, has the highest credit quality (and highest rating) and generally the lowest coupon. CLOs have structural features that serve as protection for the debt investors, such as O/C—i.e., assets to liabilities ratio—and interest coverage tests.

U.S. insurers invest predominantly in broadly syndicated loan (BSL) CLOs. Most BSL CLO portfolios are managed by an investment management firm (the CLO manager), which can buy and sell bank loans and other permissible asset types for the underlying portfolio, during a predefined reinvestment period (typically the first four to five years post-inception, or “closing,” of the transaction). CLOs outstanding have been steadily increasing in recent years. (See Chart A.1.)

Chart A.1: Historical CLOs Outstanding in the U.S. (\$bil), 2010–2019



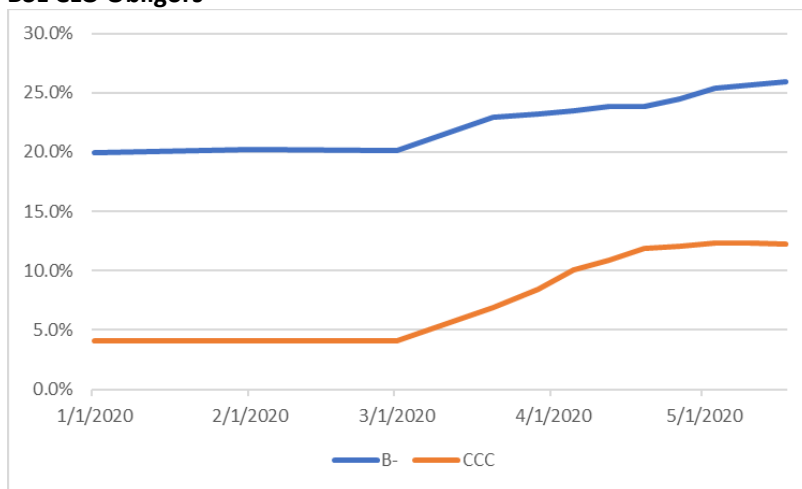
Source: SIFMA and Wells Fargo Securities

Bank Loan Collateral

The credit risk of a CLO is dependent on the underlying assets within the portfolio. For “traditional” BSL CLOs, the collateral pool primarily consists of below investment grade, first lien, senior secured, broadly syndicated bank loans (usually at least 90% of the total portfolio). Additionally, it may include a predetermined allowable portion of other asset types, such as second lien bank loans (which are highly leveraged) and unsecured debt, as well as middle market loans.

The average rating of the underlying collateral is typically about single-B, and the leveraged bank loans are typically floating rate, based on London Interbank Offered Rate (LIBOR). Because of the economic impact of COVID-19 on certain industry types—such as retail, restaurants and hotel/leisure, to name just a few—there have been record downgrades to corporate issuer ratings by the nationally recognized statistical ratings organizations (NRSROs) such that the proportion of obligors rated B- and below have significantly increased. Between Feb. 3 and May 28, 2020, S&P Global research cites that 71% of issuer credit rating actions have been downgrades with respect to CLO collateral. As of the end of May 2020, about 26% of issuers rated by S&P Global that collateralized U.S. BSL CLOs were rated B-; CCC and below accounted for 13.6%. According to S&P Global research, “since early March, more than 28% of U.S. BSL CLO collateral have been downgraded or placed on Credit Watch negative.”³ In comparison, as of Jan. 1, 2020, U.S. BSL collateral rated B- by S&P Global comprised 20.0% of the total, and those rated CCC accounted for 4.1%. (See Chart A.2.)

Chart A.2: S&P Global CLO Index Metrics (CLO Insights 2020 Index) – Percentage of B- and CCC-Rated U.S. BSL CLO Obligors



Source: S&P Global – CLO Insights 2020 Index

For additional information on bank loans and U.S. insurer exposure as of year-end 2019, please see the NAIC Capital Markets Bureau special report titled [“U.S. Insurer Exposure to Bank Loans Increase 17.5% at Year-End 2019,”](#) published June 2, 2020.

³ S&P Global, *U.S. CLO Exposure To Negative Corporate Rating Actions (As Of May 17, 2020)*, May 2020.

Useful Links:

[NAIC Capital Markets Special Report – The Rise in the U.S. Insurance Industry’s Exposure to Collateralized Loan Obligations as of Year-End 2019, May 2020.](#)

[NAIC Capital Markets Special Report – U.S. Insurer Exposure to Bank Loans Increased by 17.5% at Year-End 2019](#)

[NAIC Capital Markets Primer – Leveraged Bank Loans, November 2018](#)

[NAIC Capital Markets Primer—Collateralized Loan Obligations, July 2018](#)

[NAIC Capital Markets Primer – Combo Notes, October 2019](#)