TO: Carrie Mears, Chair, Valuation of Securities (E) Task Force
 Members of the Valuation of Securities (E) Task Force

FROM: Eric Kolchinsky, Director, NAIC Structured Securities Group (SSG) and Capital Markets Bureau
Charles A. Therriault, Director, NAIC Securities Valuation Office (SVO)

RE: Proposed Methodology for Modelling CLOs

DATE: December 12, 2022

**Summary** – A collateralized loan obligation (CLO) is type of structured security backed by a pool of debt, typically corporate loans with low credit ratings. During the Summer National Meeting the Valuation of Securities (E) Task Force (VOS) exposed a proposal to have SSG model CLOs.

**Methodology Recommendation** – Pending the decision of VOS regarding the financial modeling of CLOs as well as the Risk-Based Capital Investment Risk and Evaluation (E) Working Group (RBCIREWG) decision with respect to the addition of higher capital charges, SSG has been asked to expose the methodology which would be used to model CLOs.

The methodology presented in Annex A hereto, is based on SSG’s annual CLO stress tests. Critically, it excludes the Scenarios to be used in the process. SSG believes that the discussion of the Scenarios is expected to be more in depth and require more time once the methodology is agreed upon.

The assumptions presented here cover the mechanics of the modeling process and cash flow. A consensus on these assumptions will allow a more cogent discussion of the Scenarios and their impact.

**Questions Posed to Interested Parties**:

1. Are there any other Assumptions (other than Default / Recovery Rate) that will allow market participants to completely replicate the work of NAIC for broadly syndicated loan CLOs?
2. Are these Assumptions reasonable? Please consider that the Default and Recovery Rate Assumptions will come later and that there will be ample opportunity to comment on how these perform on actual CLOs replicated by market participants.
3. Any other issues that you wish to bring to our attention.

For any alternative assumptions or assumptions deemed unreasonable, please provide the following:

1. An actionable alternative which can be replicated by the NAIC and market participants.
2. A quantitative justification for such an alternative based on all available historical date (not just the 2011-2019 economic expansion, for example).
3. References to whether such alternative is used by rating agencies in their public published methodologies and whether it contemplates a trade-off (for example between the timing of recovery and the amount recovered). Specific citations to publications will be greatly appreciated.

ANNEX A

**NAIC Collateralized Loan Obligation (CLO) Stress Tests Methodology**

***Scope***

* We will model all tranches of broadly syndicated loan CLOs held by U.S. insurance companies.
* At this stage we will exclude:
	+ Commercial real estate (CRE) CLOs – The risk is commercial real estate, and different assumptions are required.
	+ Re-securitizations, asset-backed securities (ABS), collateralized debt obligations (CDOs) and trust preferred securities (TruPS) CDOs – They are out of scope.
	+ Middle market CLOs – They are temporarily excluded, as the asset class requires specialized assumptions. We hope to return to these assets shortly.
* Another limitation is the availability of the specific CLO via our third-party software vendor.

***Givens***

* These will be determined via the “Scenario” portion of the process following the setting of the methodology.
* Assume that the inputs are periodic “partial” default rates for each loan based on the current rating.
* In addition, assume each loan has a recovery rate, based on its seniority, for that period.

***Assigning Ratings to Underlying Assets***

* Historical default rates are reported at the **issuer** level, while the debt instrument typically has an **issue** rating, which may be different. The issuer rating is used to calibrate the default rate, while the issue rating influences the recovery rate.
* We propose the following logic:
	+ If an asset has an **Issuer** rating available within our third party software (generally those reported by Moody, Standard & Poor’s (S&P) or Fitch), that rating will be used to set the applicable default rating.
	+ Otherwise, if an asset has an **Issue** rating available within our third party software (generally those reported by Moody, S&P or Fitch) that rating will be adjusted to set the applicable default rating as follows:
		- Asset is reported as Senior Secured Loan or Senior Unsecured Bond: default rating = **Issue** rating + 1 notch (i.e. higher default probability)
		- Otherwise: default rating = **Issue** rating
		- This is different from our stress tests
	+ If the Securities Valuation Office has assigned an NAIC Designation Category to the Issue, that NAIC Designation Category will be used, unadjusted.
* Once a default rating has been established, the loan will be assumed to “partially default” until its maturity.

***Recovery Rate***

* Principal is recovered 6 months (2 periods) after default

***Cash Flow Assumptions***

* **Interest Rates / Proceeds**
	+ Forward Secured Overnight Financing Rate (SOFR) curve as of evaluation date
	+ Interest Proceeds for each period are based on the weighted average current portfolio spread plus the applicable base rate times the non-defaulting principal.
* **Maturities and prepayments**
	+ Non-defaulting portions of each loan mature based on the legal maturity
	+ No prepayments assumed
* **Reinvestment**
	+ No post-reinvestment period reinvestment
	+ Reinvestment collateral is purchased at par
	+ Reinvestment occurs before payment date – i.e., there are no principal proceeds in the waterfall that can be used to pay interest or satisfy overcollateralization (O/C) tests
	+ Reinvestment is assumed to have a rating equal to the transaction’s weighted average rating factor (WARF). If the WARF is not reported, then it is assumed to be 4.C (B3) and is defaulted as stated above.
	+ Reinvested collateral is tracked per reinvestment bucket (e.g., all reinvested collateral in one time period is tracked separately from collateral reinvested in another time period).
* **Event timing**
	+ Periodic payment on identified collateral – as per loan terms
	+ Periodic payment on reinvested collateral – quarterly
	+ Collateral defaults on its interest payment date (prior to paying interest or principal)