September 4, 2026

VIA EMAIL

Risk-Based Capital Investment Risk and Evaluation (E) Working Group
National Association of Insurance Commissioners
1100 Walnut Street, Suite 1500
Kansas City, MO 64106

Re: Comments on the American Academy of Actuaries' August 2026 C-1 Subcommittee Update on CLO Modeling Assumptions, Systemic Risk Correlation, Recovery Average, and Collateral Repurchase Price and Prepayment

Dear Chairman Barlow and Members of the Working Group:

The Alternative Credit Council ("ACC")[1] and LSTA, Inc. ("LSTA")[2] submit these comments in response to the Working Group's request for stakeholder feedback on the modeling assumptions underlying the C-1 factors for collateralized loan obligations ("CLOs"), as set out in the American Academy of Actuaries C-1 Subcommittee's August 2026 update circulating excerpts from its December 15, 2025, presentation to the Working Group (the "August Update").[3]

The August Update asks stakeholders two questions: whether we support continued refinement of the systemic risk correlation, recovery average, and collateral repurchase price and prepayment assumptions, and, if so, what refinements we recommend with empirical support. The ACC and LSTA support continued refinement, and this letter sets out specific, empirically grounded recommendations on the recovery average and on the collateral repurchase price and prepayment assumptions.

We begin by thanking Chairman Barlow, the Working Group, and the Academy for their openness to potential revisions to some CLO C1 factor modeling assumptions and for disclosing sensitivity results in enough detail to

[1] The Alternative Credit Council (ACC) is a global body that represents asset management firms in the private credit and direct lending space. It currently represents 250 members that manage over US$2 trillion of private credit assets. The ACC is an affiliate of AIMA and is governed by its own board, which ultimately reports to the AIMA Council. ACC members provide an important source of funding to the economy. They provide finance to mid-market corporates, SMEs, commercial and residential real estate developments, infrastructure, and the trade and receivables business. The ACC's core objectives are to provide guidance on policy and regulatory matters, support wider advocacy and educational efforts and generate industry research to strengthen the sector's sustainability and wider economic and financial benefits.

[2] LSTA, Inc. is a not-for-profit trade association that has been the leading advocate for the U.S. corporate lending market since 1995. LSTA's mission is to promote a fair, orderly, efficient and growing corporate loan market while advancing and balancing the interests of all market participants. Our 600+ member institutions include commercial banks (ranging in size from GSIBs to community banks), investment banks, broker-dealers, asset managers, and institutional lenders, as well as law firms and market service providers. For more information, visit www.lsta.org.

[3] American Academy of Actuaries, Excerpts from Dec. 15, 2025, C-1 Subcommittee Presentation to RBC Investment Risk Evaluation Working Group (August 2026) (the "August Update"). All sensitivity results cited in this letter are the after-tax C-1 figures set out in the August Update and are labelled by the Academy as draft and preliminary.

support meaningful stakeholder analysis. The ACC and LSTA supported exactly this course in our April 16 and June 5, 2026, joint comment letters, in which we urged that key modeling assumptions continue to be refined through the Academy's governance process after the year-end 2026 implementation milestone, and that any such refinements be addressed through the model itself rather than through administrative floors or other non-modeled adjustments.[4] The August Update reflects that commitment, and we appreciate it. We also welcome the Academy's forthcoming publication of comprehensive model documentation, which will allow stakeholders to engage with the calibration in far greater depth than the sensitivity excerpts alone permit.

Our comments reflect the analytical reality that the new CLO capital charges depend heavily on several key assumptions. The assumptions the Academy has identified for further review exert substantial leverage over the resulting C-1 factors, in several cases changing a factor by an order of magnitude. Where an assumption of that consequence rests on a value that lies outside the entire observed empirical distribution, or is imported from a universe materially different from the one being modeled, we believe that refinement is essential to protect the data-driven integrity of the results and that the NAIC's RBC Model Governance principles require. Where, by contrast, the empirical record is not yet sufficient to support a specific alternative, we say so rather than proposing a number the data cannot support. For instance, we are not in a position to propose a refinement regarding systemic risk correlation within the short comment period available, for the multiple reasons set out in section I of the first appendix.

Summary of recommendations

The ACC and LSTA respectfully urge the Working Group to:

(i) Confirm that the Academy should continue to refine the recovery average and the collateral repurchase price and prepayment assumptions, and that no refreshed factors be adopted until that work is complete and exposed for comment.

(ii) Conduct separate loss given default (LGD) analyses for broadly syndicated loan collateral and for middle-market collateral, rather than applying a single recovery assumption across both. An LGD derived from observed market prices presupposes a liquid secondary market that middle-market collateral does not have, and the Academy's calibration was built on broadly syndicated loan data alone. The 36% single-source assumption tested in Sensitivity 5 is not supportable as a standalone input for either segment.

(iii) Recalibrate the probability of default (PD) assumption to loan-issuer experience alongside any change to loss severity. The current assumption is carried over from a corporate bond model calibrated to all issuers, and loan issuers default at materially lower rates over precisely the horizon in which CLO tranches pay down. The associations are providing the historical default experience for loan issuers and all issuers and the implied ratio of their cumulative default rates that could be applied to the Academy's CLO model to address this issue.

(iv) Replace the zero-prepayment and no-repurchase-discount baseline with the fitted, state-contingent specification set out in section III, under which reinvestment price and prepayment rate are functions of the modeled default rate in each period rather than constants held across the full projection. The underlying analysis and the fitted parameters are set out in Appendix II.

[4] Joint Comment Letter of the Alternative Credit Council and LSTA, Inc. to the Risk-Based Capital Investment Risk and Evaluation (E) Working Group, Re: Comments on the American Academy of Actuaries' March 2, 2026, Presentation, C-1 Subcommittee Update on CLO C-1 Factors Modeling (April 16, 2026) (the "April Letter"); Joint Comment Letter of the Alternative Credit Council and LSTA, Inc., Re: Comments on NAIC RBC Proposal 2026-12-IRE, CLO Factor (June 5, 2026) (the "June Letter").

(v) Expose the full assumption documentation, the composition of the deal sample used, and the resulting sensitivity output for a public comment period of not less than 45 days before the Working Group votes on any refreshed factors for year-end 2027.

Appendix I to this letter sets out our reasoning and the supporting data for these recommendations, and Appendix II contains the reinvestment price analysis described in section III. We would welcome the opportunity to discuss these comments with the Working Group and the Academy in greater detail, and we are prepared to work with the Academy on the data underlying each of these assumptions.

If you have any questions, please reach out to Joe Engelhard, Head of Private Credit and Asset Management Policy, Americas, at ACC, at jengelhard@aima.org, or to Andrew Berlin, Director of Policy Research at LSTA, at aberlin@lsta.org.

Sincerely,

LSTA, INC.

Andrew Berlin
Director of Policy Research
366 Madison Avenue, 6th Floor
New York, NY 10017
aberlin@lsta.org

ALTERNATIVE INVESTMENT MANAGEMENT ASSOCIATION

Joe Engelhard
Head of Private Credit and
Asset Management Policy, Americas
1100 15th Street NW
Washington, DC 20005
jengelhard@aima.org

Appendix I

The table below summarizes the three assumptions on which the Working Group has requested feedback, the sensitivity range the Academy tested, and the position the ACC and LSTA take in each case. Each is developed in the sections that follow.

Assumption	Academy baseline	Sensitivity range tested	ACC and LSTA position
Systemic risk correlation	10% flat pairwise correlation, carried over from the C-1 corporate bond factors	5% and 20%. Baa2 moves from 0.89% to 0.04% and 8.17%; Ba3 from 30.72% to 20.18% and 52.93%	No refinement proposed at this time. The parameter is not CLO-specific, so any revision carries implications for the corporate bond factors as well and should be evaluated on that basis. We are reviewing the derivation and will revert with empirical support.
Recovery average, and the PD assumption paired with it	S&P LGD of 27% senior secured and 60% senior unsecured, fitted to S&P deciles. PD carried over from the corporate bond model, calibrated to all issuers	36% and 54% LGD. Baa2 moves from 0.89% to 21.73%; Baa3 from 2.34% to 19.62%. No PD sensitivity was run	Conduct separate LGD analyses for BSL and middle-market collateral, because the liquidity premise embedded in a market-price-derived input differs between them. The 36% single-source figure is not supportable for either segment. Recalibrate PD to loan-issuer experience alongside any change to loss severity.
Collateral repurchase price and prepayment	No prepayments and no repurchase discounts	11.8% prepayment at a price of 82.5, and 8.7% at 72.0, each held constant across the projection. Ba3 moves from 30.72% to 10.15% and 6.67%	Replace both constants with the fitted exponential relationships set out in section III, under which price and prepayment are functions of the modeled default rate, with the price series leading realized defaults by approximately 12 months. Applied across the modeled scenarios these are in several respects more conservative than the tested constants.

I. Systemic risk correlation

The Academy baselines pairwise correlation among the loans in the collateral pool at 10% and has retained that value for consistency with the C-1 bond factors. Sensitivities 1 and 2 test 5% and 20%. The results make correlation the most consequential assumption in the entire sensitivity set. At 5% correlation,

the after-tax Baa2 factor falls from 0.89% to 0.04% and the Baa3 factor from 2.34% to 0.80%. At 20% those same factors rise to 8.17% and 12.58%, and the Ba3 factor rises from 30.72% to 52.93%.

The ACC and LSTA are not in a position to propose a specific refinement to this assumption within the comment period available. The 10% parameter did not originate in the CLO workstream. It was derived in the documentation supporting the C-1 corporate bond factors and carried forward into the CLO modeling because no basis was identified for changing it.[5] Evaluating whether it should change requires working through that original derivation and assembling loan-level default correlation data, which is materially harder to obtain than the total return series more commonly available. We are undertaking that review and will revert to the Working Group and the Academy with empirical support if the analysis warrants a change.

Two observations bear on how the Working Group should treat the assumption in the meantime.

- The current parameter is not CLO-specific, so any revision has implications beyond CLOs. Because the 10% figure is shared with the corporate bond C-1 factors, a conclusion that it is miscalibrated would apply to those factors as well. Revising it for CLO collateral alone, in either direction, would introduce precisely the inconsistency that the equal capital for equal risk principle is meant to prevent. Any change should be evaluated for both asset classes together and through the same governance process.
- The academic literature on this point is not yet settled enough to make any changes. The studies cited in the August Update report correlations that vary widely by horizon and by rating, and in several cases do not cleanly separate default correlation from return correlation. Return correlations are systematically higher than default correlations, so estimates that blend the two are not a sound basis for setting a default correlation parameter in either direction. Where the correlation assumption is refined, the underlying studies should be assessed for that distinction before their estimates are relied upon.

We note that if the Working Group were to consider differentiating correlation by rating, consistency would require considering the other drivers of default correlation as well, including obligor and facility size. Facility sizes in the broadly syndicated loan market have grown substantially, and the size distribution of the collateral pool bears on realized correlation in the same way that rating does. Differentiating on one dimension while holding the others fixed would not produce a better calibrated parameter.

II. Recovery average, and the default frequency assumption paired with it

The Academy baselines recovery on the S&P average LGD of 27% for senior secured loans and 60% for senior unsecured loans, fitted to the shape of the S&P decile data by least-squares optimization so that the tail rather than the mean drives the result. Sensitivity 5 tests a higher assumption of 36% and 54%. The effect is severe and concentrated at the ratings where insurers hold significant exposure. The after-tax A2 factor moves from 0.04% to 1.77%, the Baa2 factor from 0.89% to 21.73%, a twenty-fourfold increase, the Baa3 factor from 2.34% to 19.62%, and the Ba3 factor from 30.72% to 59.09%.

[5] Moody's Analytics, documentation supporting the C-1 corporate bond factors developed for the ACLI (2021), at the discussion of the systemic risk correlation parameter.

The 36% single-source assumption is not supportable, and a headline average is the wrong instrument

The ACC and LSTA do not support adopting the 36% assumption tested in Sensitivity 5. Two problems attend it, and both would attend any recalibration that proceeds by moving a headline average.

- A single agency's figure imports that agency's methodology wholesale. S&P's recovery study measures nominal ultimate recovery realized on emergence from the restructuring process. Moody's recovery measures differ in the discounting convention applied to recoveries received over time, in whether recovery is measured at the instrument or the corporate family level, and in the treatment of post-default trading prices. A meaningful portion of the nine percentage point gap between the two headline figures reflects these methodological differences rather than a genuine disagreement about loss severity. Adopting the higher figure would treat a difference in measurement convention as though it were an empirical finding about how much is recovered.
- Any revision must be constructed at the decile level, not by moving a central estimate. The Academy fits to the S&P deciles precisely because CTE-90 is a tail measure and the shape of the recovery distribution, not its mean, drives the result. Substituting a different headline average and re-fitting it to the existing decile shape would shift the central tendency while leaving the dispersion untouched, which is not a coherent recalibration of a tail-driven model. A defensible revision has to be built from the underlying distribution.
- The recovery assumption interacts materially with the repurchase price and prepayment assumptions, and should not be refined in isolation. Combined Sensitivities 8 and 9 apply the lower recovery assumption together with the prepayment and repurchase discount specifications. Under those combinations, the Baa3 factor is 5.51% and 3.43%, against 19.62% when the recovery change is applied alone, and the Ba3 factor is 31.12% and 23.27%, against 59.09%. The severity of Sensitivity 5 is therefore substantially an artifact of holding the zero-prepayment and no-discount baseline fixed while the recovery assumption moves. The Working Group should not treat any single-assumption sensitivity as an estimate of the factor that a full recalibration would produce.

The recovery assumption should be analyzed separately for broadly syndicated and middle-market collateral

The most consequential refinement available on the recovery assumption is not a change in its level but a change in its scope. A recovery assumption derived from observed market prices and market-value-based recovery measures carries an embedded premise: that a liquid secondary market exists in which the collateral can be marked and sold. That premise holds for broadly syndicated loans. It does not hold for middle-market collateral, which is originated bilaterally or through club processes, lacks broadly available market pricing, and does not trade in any comparable sense. The Academy's calibration was built on broadly syndicated loan data, and the resulting recovery input is nonetheless applied to middle-market collateral without any analysis specific to that segment.

- Recovery in the middle-market segment is determined by different mechanics. Outcomes are driven by lender control within a concentrated group, covenant structure, and access to collateral through a negotiated workout, rather than by a post-default trading price. Those mechanics have historically supported higher recoveries than a market-price-based measure would imply, because the holder is positioned to manage the credit rather than to sell it into a distressed bid.

- The direction of the error is not neutral. Applying an LGD derived from liquid secondary market behavior to illiquid, directly originated collateral systematically understates recovery for that segment, and therefore overstates the capital charge. A single parameter applied across both segments cannot satisfy the principle of equal capital for equal risk, because the two segments do not carry equal risk on the dimension the parameter measures.
- The problem is compounded, not cured, by any revision to the level. If the recovery assumption is moved on the strength of broadly syndicated loan data, the revised figure is applied to middle-market collateral with even less support than the current one, because the evidentiary basis for the change is drawn entirely from the segment to which it properly applies. Separating the analysis is therefore a precondition to revising the level, not an alternative to it.

The ACC and LSTA accordingly ask that the Academy conduct separate LGD analyses for the two segments, and that any revised recovery input be derived from and applied to the segment whose experience supports it. The data required to do so are available. Credit rating agencies with substantial middle-market CLO coverage have indicated a willingness to provide the necessary recovery data, and S&P alone rates approximately two-thirds of the middle-market CLO market on a dollar basis. We understand that the Working Group expects to consider middle-market CLOs within its broader asset-backed securities workstream, and that the comparable attributes framework may ultimately be retained for that segment. Our request here is narrower and does not depend on that outcome. It concerns the recovery input itself, and the fact that the liquidity premise embedded in that input differs fundamentally between the two segments.

If loss severity is made loan-specific, default frequency must be as well

The recovery assumption and the PD assumption are the two inputs to expected loss. The Academy is considering whether loss severity should be calibrated to loan-specific experience. The default frequency assumption sitting alongside it has not been, and the two cannot be treated differently without producing an internally inconsistent expected loss. The Academy's PD assumptions are carried over from the Moody's corporate bond model, which is calibrated to all issuers rather than to the loan issuer universe that constitutes CLO collateral.

The associations have quantified the difference. Using the Moody's Default and Recovery Database cumulative default rate series for all issuers and for loan-only issuers, across 29 annual cohorts from January 1, 1996 through December 31, 2024, we regressed loan-only issuer cumulative default rates on all-issuer cumulative default rates through the origin across the Baa1 to Caa3 notches, at one, three, five and seven year horizons.[6] The resulting multipliers are 0.63 at one year, 0.73 at three years, 0.81 at five years and 0.85 at seven years. The loan-only issuer advantage therefore erodes at approximately 0.037 per additional year and converges on parity by roughly year ten.

That pattern is decisive for CLOs, because the advantage is concentrated in exactly the years in which CLO tranches pay down. Tranches typically amortize over roughly five to six years, so the portion of the curve that drives tranche outcomes is the portion in which loan issuers default at between 0.63 and 0.81

[6] Loan vs All Issuer Cumulative Default Rate Ratios, analysis prepared by ACC and LSTA members and provided to the Academy with this letter. Source data: Moody's Default and Recovery Database cumulative default rate timeseries for all issuers and loan-only issuers, 29 annual cohorts from January 1, 1996 through December 31, 2024, all countries and industries, ratings Aaa through C. Multipliers are the slope of a zero-intercept regression of loan-issuer on all-issuer cumulative default rates across the Baa1 to Caa3 notches.

times the all-issuer rate. A calibration built on the all-issuer curve does not produce a conservative result so much as a mismatched one, and the mismatch is largest precisely where it matters most. We would add that the benefit is concentrated in speculative grade, where the loan-only to all-issuer ratio across the B1 to Caa3 notches runs between roughly 0.4 and 0.9, consistent with the covenant protection and senior secured position that distinguish loan obligations from the broader rated universe.

We recognize that the PD assumption was not among the three items on which the August Update solicited comment. We raise it because it is not a separable question. A revision to loss severity that is not accompanied by a corresponding revision to default frequency would move one input of expected loss toward loan-specific experience while leaving the other calibrated to a broader universe, and the resulting factor would be less accurate than either a fully loan-specific or a fully general calibration. The ACC and LSTA will provide the supporting default rate data to the Academy, and we understand that the same analysis is being shared with the ACLI.

III. Collateral repurchase price and prepayment

The Academy baselines the model on no prepayments and no repurchase discounts. This is the assumption most clearly at odds with the empirical record, and it is the assumption on which the ACC and LSTA urge the most substantial refinement. It is also the assumption that appears to drive the results of the December 2025 sensitivity test, rather than market data. This section sets out a specific alternative specification, including the benchmark and the filter the Academy would need to construct it.

The baseline lies outside the observed distribution, and the tested alternative was applied in a way the data does not support

Prepayments have never ceased in the broadly syndicated loan market. The associations have assembled the monthly history of the Morningstar LSTA US Leveraged Loan Index from November 1998 through September 2025, measuring the trailing 12-month default rate by principal, the weighted average bid price, the trailing 12-month average price, and the trailing 12-month repayment rate.[7] Over that period the trailing 12month repayment rate averaged 30.99%. Its maximum was 62.59%. Its minimum, across 27 years including two systemic credit crises, was 8.69%, recorded in March 2009. Prepayment has never approached zero. Across the COVID period, approximately 14% of CLO collateral paid off at par on an annualized basis through amortization and scheduled payments, and the index repayment rate did not fall below 17.66%.

That figure locates the Academy's own parameters precisely. Sensitivity B applies a prepayment rate of 8.7%, drawn as the VaR(0.5) of the historical data. The lowest trailing 12-month repayment rate ever recorded in the index is 8.69%. Sensitivity A's 11.8%, drawn as the CTE(10), sits just above it. Neither is an implausible point estimate; each is close to the worst outcome the market has produced. The difficulty is that a value observed in the single worst month of the worst credit environment on record was then assumed to persist for a 10-year projection. The zero baseline lies below even that. The baseline is not a conservative point within the observed distribution but a value the distribution does not contain.

[7] US Leveraged Loan Index: Defaults vs Price and Prepayments, analysis prepared by ACC and LSTA members and provided to the Academy with this letter. Source data: Morningstar LSTA US Leveraged Loan Index, monthly, November 1998 through September 2025. Default rates are trailing twelve month by principal; repayment rates are trailing twelve month repayments as a percentage of total loan outstandings. The price relationship is fitted to the trailing twelve month average price.

The difficulty with the tested alternative is not the level of the parameters but the way they were applied. Each was drawn from the tail of its own historical distribution and then held constant across the entire projection.[8] The remedy is not to return to a zero assumption, which is equally unsupported by the data and errs in the opposite direction. The remedy is to make the parameters vary with the credit environment, which is what the record shows they do.

A fitted specification the Academy can implement

We understand the constraint the Academy is working under, which is that any specification must be simple enough to implement systematically within the cash flow projection while being realistic enough to withstand scrutiny. Rather than describe an approach in the abstract, the associations have fitted the relationships directly and set out the underlying analysis in Appendix II. The specification below uses only variables the model already produces.

We fitted reinvestment price and prepayment rate to the trailing 12-month default rate in exponential form, $y = a \times \exp(b \times d)$, where d is the trailing 12-month default rate. The fitted relationships are:

- Reinvestment price = $99.443 \times \exp(-2.236 \times d)$, fitted against the trailing 12-month average price, with a correlation to the default rate of −0.74.
- Prepayment rate = $0.3657 \times \exp(-12.36 \times d)$, with a correlation to the default rate of −0.40.

The exponential form is a deliberate choice, and it resolves the problem that led the Academy to constants in the first place. Fitting a linear relationship to the observed range and then extrapolating into the tail produces negative prices and negative prepayment rates at the default levels the model generates for the lowest rating categories in the most severe scenarios. These default levels are far in excess of anything in the historical record. The exponential form is bounded below by zero and asymptotes as defaults rise, so it can be applied across the full range of modeled default rates without producing impossible values and without requiring an arbitrary floor. It moderates the predicted values in extreme scenarios by construction rather than by adjustment.

- Replace each constant with a vector, constructed separately for each scenario. Rather than a single prepayment speed and a single price applied uniformly, each scenario carried through the cash flow model should receive its own time-varying vector of prepayment speeds and reinvestment prices. Scenarios with elevated simulated defaults would carry slower prepayment and deeper discounts in the affected periods, while benign scenarios would carry speeds and prices near their long-run averages.
- Apply the fitted relationships period by period to the modeled default rate. In each projection period, the simulated marginal default rate is the input, and the two equations return a reinvestment price and a prepayment rate. This ties both variables to a single state variable the model already generates, requires no additional stochastic process, and is fully transparent and reproducible from the parameters set out above. The associations have applied the relationships across nine Moody's rating categories from Ba1 to Caa3, 10 loss years and 17 stress percentiles from the 90th to the 99.99th, and that output is set out in Appendix II.

[8] August Update, slide 6 (previously stated reasons to retain the baseline assumptions).

- Lead the price vector ahead of realized defaults by approximately 12 months. Market prices dislocate on expectation while defaults follow on realization, so a specification that applies the discount contemporaneously with defaults understates the reinvestment opportunity. The observed lag between the onset of price dislocation and the associated default wave has ranged from roughly nine to 18 months, and 12 months is a reasonable central assumption. The COVID episode illustrates the mechanism: prices dislocated sharply in March 2020, while the associated defaults did not materialize in volume until 2021 and 2022. Through that interval CLOs reinvested at discounts in collateral that was still performing.
- Recognize that the two channels do not respond alike. The fitted slope on prepayment, −12.36, is more than five times the slope on price, −2.236, so in proportional terms prepayment is by some margin the more responsive of the two. At Ba1 in the first loss year at the 99.99th percentile, the modeled default rate of 7.2% produces a reinvestment price of 84.7, roughly 15% below its benign level, while the prepayment rate falls from about 31% to 15.1%, a decline of more than half. Price, by contrast, is bounded in practice by the behavior of the market: the weighted average bid price has never closed a month below 61.74, recorded in December 2008. Drawing both parameters from the tail and holding them constant misstates both channels at once, understating how sharply prepayment collapses in severe scenarios and overstating how long a deep price discount persists.

The fitted specification is not a device for lowering charges

The associations recognize that the Working Group will want to know whether a state-contingent specification simply produces lower capital charges by another route. It does not. Applied across the modeled default rates, the fitted relationships is more conservative on average than the constants the Academy tested.

- Across all ratings, percentiles, and loss years, the weighted average fitted reinvestment price is 86.1. That is above the 82.5 applied in Sensitivity A and well above the 72.0 applied in Sensitivity B. As such, on average across all tail scenarios, ratings and time, a lower reinvestment benefit is assumed under the proposed specification than the sensitivities considered by the Academy.

A qualification on the price relationship, and a commitment to refresh it

One qualification attaches to the price relationship, and the associations raise it now rather than leave it to be discovered. The relationship is fitted to the full index, which includes distressed names that CLO managers do not purchase. As set out below, managers migrate up in credit quality during dislocation, so a price series drawn from the whole index understates the price a CLO actually pays and therefore overstates the reinvestment discount the model would credit.

The associations are obtaining the index constituent data that most closely represents the CLO investing universe, and we expect that refit to raise the predicted reinvestment price at every default rate. Accordingly, that would reduce the modeled benefit relative to the parameters set out above. We will provide the refreshed analysis to the Academy within the coming weeks. We flag the point in advance because the direction of the correction runs against the most beneficial outcome for our members, but we want to be consistent in following an appropriate data-driven analysis. As a result, we recommend that the Academy should not adopt the price relationship in its present form without it first receiving and incorporating this additional data. The prepayment relationship is not affected.

The specification should also reflect contractual reinvestment spread and interest rate floors

Price is not the only reinvestment variable that responds to the credit environment. Contractual reinvestment spreads widen materially in and after periods of stress, and the widening persists well beyond the dislocation itself. The weighted average contractual spread in the loan market was approximately 350 basis points at the end of 2019 and remained elevated at approximately 379 basis points at the end of 2021, notwithstanding that 2021 was a notably loose credit environment. Interest rate floors also become more prevalent as base rates fall, which is the environment in which credit stress typically occurs. Both effects increase excess spread, and excess spread is materially more protective once an overcollateralization test has been tripped and cash is being diverted to senior tranches. A specification that captures the reinvestment discount while omitting the associated spread and floor effects would model only part of the reinvestment economics.

Cross-deal variability is a property of the sample, not evidence against the assumption

The Academy also cited widely varying results across deals under Sensitivities 6 and 7. Under Sensitivity A the Ba3 results range from 0.00% for Carlyle 2021-1 to 31.11% for Ares 52, and under Sensitivity B they range from 0.00% to 28.68%. Dispersion of that magnitude reflects deal-specific structural features rather than a defect in the assumption being tested. The baseline results carry the same underlying sensitivity to deal selection; the alternative specifications simply make it visible. Selecting the assumption that produces the least dispersion would optimize for the appearance of stability rather than for accuracy. We understand that the Academy's testing now extends well beyond the deals used for the December 2025 sensitivities, which should address the dispersion concern directly and on its own terms.

IV. Transparency and exposure before any year-end 2027 factor update

The ACC and LSTA have consistently supported addressing assumption questions through the model and its documented governance process rather than through floors, caps or other non-modeled adjustments applied after the fact, and the Working Group has consistently done so. Principle 9 of the Principles for RBC Requirements adopted on December 10, 2025, requires clear, complete and transparent communication and documentation of proposed and adopted updates, methodologies and supporting rationale, and Principle 10 requires adherence to model risk management standards relying on data-driven methodologies.[9] Applying those principles to the workstream the August Update describes, we ask the Working Group to commit to the following before any refreshed factors are adopted for year-end 2027.

- Publish the full assumption documentation in advance of adoption, including the derivation of the systemic risk correlation parameter and its relationship to the corporate bond calibration, the recovery fitting methodology together with the decile inputs used and any reconciliation between the S&P and Moody's datasets, the basis for the PD assumption, and the complete specification of any prepayment and repurchase price vectors.
- Disclose the composition of the deal sample used, including the number of deals, the vintage distribution, the rating distribution across tranches, the manager distribution, and the criteria applied

[9] Principles for RBC Requirements adopted by the Risk-Based Capital Model Governance (EX) Task Force on December 10, 2025. Principle 9 (Transparency) requires clear, complete and transparent communication and documentation of proposed and adopted updates, methodologies, and supporting rationale. Principle 10 (Process) requires adherence to model risk management standards relying on data-driven methodologies.

for inclusion, so that stakeholders can assess whether the sample is representative of insurer-held BSL CLO exposure.

- Expose any refreshed factors for a public comment period of not less than 45 days before the Working Group votes, and provide the underlying sensitivity results at the same level of detail as the December 15, 2025, excerpts contained in the August Update. That level of disclosure is what has made this comment letter possible, and it should be the standard for the refinement workstream rather than the exception. We note that the Working Group and the Capital Adequacy (E) Task Force applied a 45-day comment period to the exposure of the RBC Preamble itself, and that the technical complexity of the CLO calibration warrants no less.
- Implement any assumption changes through the model itself. Where a refined assumption produces a factor materially different from the year-end 2026 factor, whether higher or lower, that difference reflects the model's improved assessment of actual risk and should flow through to the factor. A one-sided adjustment that permits increases but not decreases would be inconsistent with Principle 4 of the Principles for RBC Requirements adopted by the Risk-Based Capital Model Governance (EX) Task Force on December 10, 2025, which provides that RBC requirements should be guided by the principle of equal capital for equal risk, consistent in their statistical safety levels and time horizons, appropriate for the underlying risk.

V. Conclusion

The ACC and LSTA support the continued refinement of the assumptions identified in the August Update, and we have set out the specific recommendations the empirical record will carry. The recovery input should be analyzed separately for broadly syndicated and middle-market collateral, because the liquidity premise embedded in a market-price-derived assumption does not hold across both, and no revision to its level should be applied to a segment whose experience did not support the revision. The 36% single-source figure tested in Sensitivity 5 is not supportable for either segment. Any move toward loan-specific loss severity must also be accompanied by a corresponding move toward loan-specific default frequency. The zero-prepayment and no-discount baseline, which lies below anything the index has recorded in 27 years, should be replaced with the fitted exponential relationships set out in section III, applied period by period to the modeled default rate and led ahead of realized defaults by approximately twelve months. Applied across the modeled scenarios, that specification is more conservative on average than the constants tested in December 2025, and we will provide the underlying analysis to the Academy so that it can be tested directly.

On systemic risk correlation, we have declined to propose a figure the available evidence cannot yet support. We are reviewing the derivation and will revert if our analysis warrants a change. We note only that the parameter is shared with the corporate bond C-1 factors and that any revision should be evaluated for both asset classes through the same process.

All of this work should be exposed for public comment before any factor is updated. We appreciate the Working Group's and the Academy's continued engagement and are prepared to provide the underlying data on each of these points. We would also welcome the opportunity to discuss these comments in greater detail with the Working Group and its staff.

Appendix II

Predicted reinvestment price under the proposed specification, compared with the Academy's tested constants

This appendix reproduces the two worksheets of the reinvestment price analysis described in section III. Part A sets out the reference inputs, being the weights applied across the 17 stress percentiles, the sample CLO rating weights and the average trailing twelve month default rate associated with each rating, together with the resulting weighted average reinvestment price and the two constants the Academy tested. Part B sets out the full grid of predicted reinvestment prices by rating, loss year and stress percentile, from which the weighted average is derived.

Part A. Reference inputs

Weighted average reinvestment price against the Academy's tested constants

Measure	Price
Wtd Avg Reinvestment Price Across 9 ratings, 10Y and 17 Scenarios	86.11
Academy's Sensitivity A Reinvestment Price	82.50
Academy's Sensitivity B Reinvestment Price	72.00

Scenario weights applied across the 17 stress percentiles

Percentile	Optimistic	Conservative	Average
0.9999	0.50%	0.00%	0.25%
0.9995	0.50%	0.50%	0.50%
0.999	1.50%	0.50%	1.00%
0.9975	2.50%	1.50%	2.00%
0.995	2.50%	2.50%	2.50%
0.9925	2.50%	2.50%	2.50%
0.99	5.00%	2.50%	3.75%
0.985	5.00%	5.00%	5.00%
0.98	10.00%	5.00%	7.50%
0.97	10.00%	10.00%	10.00%
0.96	10.00%	10.00%	10.00%
0.95	10.00%	10.00%	10.00%
0.94	10.00%	10.00%	10.00%
0.93	10.00%	10.00%	10.00%
0.92	10.00%	10.00%	10.00%
0.91	10.00%	10.00%	10.00%
0.9	0.00%	10.00%	5.00%

Sample CLO rating weights and average default rate across the 17 tail scenarios

Rating	Sample CLO weight	Average LTM default rate
Ba1	2.73%	95.06

Rating	Sample CLO weight	Average LTM default rate
Ba2	3.62%	92.72
Ba3	10.07%	90.91
B1	18.11%	88.63
B2	37.57%	85.53
B3	26.03%	82.27
Caa1	1.28%	77.98
Caa2	0.42%	72.35
Caa3	0.18%	63.06

The weighted average reinvestment price of 86.11 is calculated across all nine rating categories, ten loss years and seventeen stress percentiles, using the average scenario weights and the sample CLO rating weights set out above. It exceeds the 82.5 applied in the Academy's Sensitivity A and the 72.0 applied in Sensitivity B, so the proposed specification assumes a smaller reinvestment benefit, on average across ratings, scenarios and time, than either constant the Academy tested.

Part B. Predicted reinvestment price by rating, loss year and stress percentile

Each table reports the reinvestment price returned by the fitted relationship, price = 99.443 × exp(−2.236 × d), where d is the modeled default rate for that rating, loss year and stress percentile. Columns are loss years 1 through 10; rows are the 17 stress percentiles.

Ba1

Percentile	1	2	3	4	5	6	7	8	9	10
0.9999	84.71	88.99	92.90	88.68	96.74	95.40	92.87	90.34	95.93	94.70
0.9995	87.97	86.57	95.61	89.59	95.92	92.54	97.44	95.71	94.50	90.46
0.999	88.42	88.98	93.73	91.45	93.25	94.57	96.19	96.63	94.67	91.26
0.9975	89.65	91.75	92.00	92.36	93.42	94.08	97.10	95.68	95.13	94.72
0.995	91.05	92.49	92.48	92.65	93.85	94.54	95.72	95.61	95.89	95.25
0.9925	91.92	92.54	92.90	93.18	94.10	94.74	95.69	95.27	95.58	96.12
0.99	92.47	92.76	93.18	93.52	94.03	94.44	96.06	95.51	95.06	96.08
0.985	93.26	93.18	93.44	93.54	94.89	94.41	95.95	95.53	95.30	95.47
0.98	93.75	93.44	93.48	94.02	94.85	94.56	95.86	95.68	95.73	95.42
0.97	94.48	93.84	93.86	94.31	95.01	94.62	95.82	95.85	95.96	95.45
0.96	94.93	94.13	94.17	94.48	94.99	94.98	95.86	95.63	96.21	95.60
0.95	95.35	94.45	94.35	94.61	95.21	95.04	95.67	95.93	95.95	95.82
0.94	95.69	94.63	94.42	94.77	95.19	95.42	95.65	95.84	96.01	95.82
0.93	95.94	94.86	94.50	94.87	95.32	95.56	95.66	95.77	95.98	95.99
0.92	96.13	95.07	94.63	94.88	95.52	95.51	95.77	95.79	96.01	95.90
0.91	96.38	95.17	94.77	94.93	95.51	95.59	95.72	95.93	96.00	95.95
0.9	96.51	95.30	94.98	94.97	95.53	95.61	95.94	95.95	95.83	95.99

Ba2

Percentile	1	2	3	4	5	6	7	8	9	10
0.9999	78.77	81.59	85.70	95.44	90.60	86.32	94.77	90.55	98.12	86.96
0.9995	81.79	84.15	89.39	88.73	90.54	89.57	91.93	97.64	88.96	93.07
0.999	83.76	85.10	87.93	89.88	90.17	90.06	95.54	93.48	91.80	92.26
0.9975	85.38	87.89	87.70	90.16	89.93	91.33	94.57	94.67	92.29	94.69
0.995	87.04	88.72	88.62	89.79	90.83	92.13	93.19	94.06	95.23	92.03
0.9925	88.28	89.10	88.87	90.04	91.15	92.56	92.89	94.20	94.08	93.17
0.99	89.06	89.09	89.34	90.64	90.87	93.50	92.82	92.85	94.78	93.22
0.985	89.99	89.93	90.07	90.58	91.67	92.48	92.88	93.64	94.15	94.26
0.98	90.78	90.07	90.38	91.16	91.28	93.03	93.68	93.56	93.90	94.11
0.97	91.88	90.56	91.05	90.63	92.42	92.81	93.98	94.00	93.97	93.73
0.96	92.69	90.97	91.09	91.14	92.96	92.50	93.76	94.53	93.92	93.82
0.95	93.18	91.35	91.37	91.60	92.95	92.53	93.95	94.25	94.12	94.25
0.94	93.62	91.67	91.67	91.69	93.03	92.71	94.09	94.14	94.31	94.20
0.93	94.01	91.87	91.84	91.88	93.04	93.15	93.82	94.37	93.98	94.30
0.92	94.28	92.19	91.87	91.98	93.21	93.28	93.80	94.30	94.26	94.39
0.91	94.51	92.44	92.00	92.05	93.39	93.29	93.93	94.31	94.36	94.43
0.9	94.73	92.64	92.10	92.17	93.51	93.30	94.06	94.26	94.49	94.45

Ba3

Percentile	1	2	3	4	5	6	7	8	9	10
0.9999	74.34	77.04	91.54	88.55	86.53	83.66	95.53	85.15	98.39	83.78
0.9995	76.65	83.80	84.76	86.75	89.41	82.95	94.95	95.12	91.16	88.22
0.999	77.49	84.33	85.50	87.66	88.42	86.13	94.58	90.78	91.47	95.01
0.9975	80.40	85.73	85.57	86.86	88.36	89.72	91.18	94.65	90.78	93.15
0.995	83.11	85.72	86.63	86.91	89.70	89.36	90.77	93.98	93.76	91.56
0.9925	84.84	85.54	87.40	87.67	89.49	89.45	91.39	93.15	93.38	92.02
0.99	85.85	86.14	87.55	87.82	89.27	90.13	91.72	92.78	92.87	93.08
0.985	87.02	86.72	87.99	88.40	89.64	90.24	91.72	93.16	92.22	92.76
0.98	87.94	87.09	88.12	88.77	90.37	90.07	92.19	92.22	93.14	92.74
0.97	89.03	87.69	88.86	89.07	90.91	90.68	92.14	92.24	92.49	93.11
0.96	89.99	88.09	89.11	89.50	91.00	90.98	92.13	92.66	92.61	93.09
0.95	90.62	88.68	89.24	89.52	91.08	91.41	92.45	92.54	92.89	92.92
0.94	91.09	89.16	89.55	89.36	91.38	91.68	92.18	92.74	93.37	93.21
0.93	91.54	89.48	89.62	89.77	91.23	91.82	92.46	92.96	93.12	93.42
0.92	91.95	89.75	89.67	90.17	91.23	91.94	92.52	93.08	93.23	93.27
0.91	92.30	89.96	89.86	90.20	91.50	91.92	92.65	93.06	93.32	93.39
0.9	92.59	90.19	89.96	90.55	91.29	92.16	92.58	93.12	93.43	93.53

B1

Percentile	1	2	3	4	5	6	7	8	9	10
0.9999	65.76	72.11	87.58	83.25	94.98	80.01	91.76	84.92	93.42	86.78
0.9995	68.51	79.35	81.56	85.91	89.65	82.06	90.85	88.76	88.61	86.07
0.999	70.35	82.49	80.08	84.92	88.87	84.51	91.30	86.67	90.54	87.55
0.9975	75.39	78.75	83.69	85.66	87.91	87.13	88.93	89.73	89.00	92.76
0.995	77.33	80.96	84.87	84.26	87.77	87.63	90.16	89.48	91.05	90.27
0.9925	79.57	81.27	84.34	86.09	86.90	88.17	89.99	90.20	90.97	91.60
0.99	80.68	82.16	84.14	85.58	87.77	88.72	89.22	91.48	91.49	91.54
0.985	82.31	83.12	84.51	85.29	88.17	89.23	89.56	90.57	91.13	92.60
0.98	83.45	83.55	84.65	85.81	88.38	89.79	88.74	91.04	91.52	92.31
0.97	84.91	84.72	85.09	86.40	88.55	89.61	89.33	91.42	91.62	91.58
0.96	85.94	85.23	85.83	86.60	88.58	89.54	89.99	91.28	91.35	92.10
0.95	86.82	85.66	86.35	86.75	88.59	89.52	90.91	90.93	91.46	92.35
0.94	87.51	85.96	86.41	87.48	88.45	89.46	91.03	90.71	92.47	92.07
0.93	88.19	86.16	86.56	87.95	88.71	89.24	91.11	91.07	92.36	92.10
0.92	88.70	86.63	86.80	87.99	88.80	89.57	90.80	91.52	91.87	92.39
0.91	89.23	86.87	87.12	87.90	89.03	89.55	90.80	91.66	92.23	92.27
0.9	89.58	87.23	87.30	88.03	89.26	89.43	90.87	91.88	91.93	92.77

B2

Percentile	1	2	3	4	5	6	7	8	9	10
0.9999	59.67	68.88	83.96	82.32	77.24	86.53	79.88	98.05	77.73	96.99
0.9995	63.34	70.99	79.22	82.67	80.34	82.58	91.18	87.77	90.57	87.01
0.999	66.16	70.41	79.35	82.40	82.19	82.49	92.38	87.70	87.37	89.35
0.9975	69.43	75.93	75.11	83.96	83.17	84.13	88.13	87.51	89.48	90.46
0.995	71.60	77.29	78.04	82.50	83.64	84.43	88.81	87.49	87.46	89.16
0.9925	73.56	78.17	78.35	82.99	83.32	85.28	87.78	87.48	87.87	89.55
0.99	74.37	79.26	79.52	82.89	82.82	85.41	88.23	87.05	88.33	88.97
0.985	75.95	79.88	81.25	82.75	83.75	85.20	87.62	88.17	88.63	89.02
0.98	77.15	80.36	81.50	82.54	84.99	85.86	86.35	88.96	89.11	88.85
0.97	79.56	80.22	82.56	83.45	84.09	87.29	86.43	89.11	89.35	89.05
0.96	80.91	81.00	82.83	83.62	84.80	87.05	87.25	88.30	89.48	90.61
0.95	81.90	81.51	82.89	83.97	85.51	86.49	87.63	88.74	89.52	91.07
0.94	82.78	81.95	83.10	84.11	85.56	86.53	88.24	88.75	89.96	91.07
0.93	83.52	82.36	83.33	84.25	85.90	86.76	88.19	88.75	90.00	90.76
0.92	84.23	82.68	83.44	84.25	86.19	86.66	88.79	88.68	90.04	90.34
0.91	84.80	83.18	83.53	84.31	86.38	86.87	88.46	88.83	90.05	90.68
0.9	85.33	83.45	83.77	84.34	86.45	87.13	88.24	89.12	89.95	91.19

B3

Percentile	1	2	3	4	5	6	7	8	9	10
0.9999	44.87	71.47	73.54	75.03	91.79	81.74	87.13	78.95	89.27	84.99
0.9995	49.11	71.53	72.72	81.48	79.90	81.19	87.86	83.02	89.45	84.50
0.999	51.94	73.33	72.04	82.21	77.03	81.81	87.37	82.97	90.63	87.59
0.9975	56.62	73.50	74.77	78.19	78.44	80.10	86.40	87.62	86.19	89.43
0.995	60.00	73.64	74.33	79.13	79.69	81.76	85.24	87.90	88.98	87.73
0.9925	61.96	74.20	74.36	78.02	82.37	82.56	83.87	88.40	88.01	87.20
0.99	63.45	73.84	75.29	78.17	82.39	82.44	86.98	85.73	88.36	87.41
0.985	64.99	75.54	76.05	78.34	82.32	84.14	84.56	87.70	87.49	88.58
0.98	66.77	75.59	76.20	79.52	81.74	85.65	85.21	86.78	87.09	88.99
0.97	69.39	75.64	77.36	80.06	82.47	85.04	86.08	85.96	88.21	88.13
0.96	71.11	76.40	77.43	81.04	82.27	84.77	86.52	86.33	87.84	88.95
0.95	72.49	76.69	77.97	81.37	82.58	84.18	86.91	86.83	87.96	88.76
0.94	73.55	77.13	78.68	80.85	83.16	84.43	86.98	86.40	88.14	89.32
0.93	74.50	77.36	79.16	80.98	83.22	84.77	86.69	86.75	88.30	89.44
0.92	75.37	77.72	79.40	80.80	83.76	84.69	86.73	87.03	88.33	90.01
0.91	76.18	78.14	79.36	81.17	83.92	84.87	86.21	87.50	88.34	89.88
0.9	76.86	78.44	79.85	81.09	83.95	85.02	85.94	87.65	88.59	90.09

Caa1

Percentile	1	2	3	4	5	6	7	8	9	10
0.9999	33.97	62.27	71.66	71.65	83.63	67.64	85.74	80.92	84.21	84.07
0.9995	37.03	66.08	71.24	71.83	77.53	77.40	81.05	76.56	86.05	91.76
0.999	38.50	71.31	69.08	72.36	76.94	76.01	82.13	87.77	77.23	85.77
0.9975	43.40	67.66	71.36	69.38	76.54	80.10	81.16	85.35	86.24	80.48
0.995	46.22	69.56	69.75	71.76	77.10	80.81	84.63	83.60	83.90	87.84
0.9925	48.73	67.86	69.94	73.22	77.59	80.97	83.59	82.81	86.63	87.23
0.99	50.04	68.35	69.87	73.73	78.17	79.40	84.95	84.69	85.81	87.74
0.985	52.04	68.78	71.09	74.36	77.77	81.08	83.53	85.61	86.89	85.62
0.98	53.82	68.47	72.23	74.41	78.54	81.44	84.40	84.97	85.83	85.68
0.97	56.46	68.99	73.07	74.84	78.36	81.47	85.25	85.35	85.86	86.28
0.96	58.20	69.70	73.43	75.07	79.00	82.37	83.67	85.54	86.24	87.17
0.95	59.61	70.21	73.92	75.48	79.41	82.65	82.99	85.91	86.08	87.05
0.94	60.78	70.62	73.82	76.49	79.02	82.75	83.72	85.40	86.19	87.61
0.93	61.95	71.41	73.72	76.29	79.70	83.05	82.76	86.05	86.17	87.30
0.92	62.87	71.99	73.82	76.57	79.78	82.71	83.47	86.28	86.10	87.17
0.91	63.69	72.25	74.06	76.72	79.87	82.72	83.85	85.88	86.43	87.33
0.9	64.52	72.60	73.96	77.11	79.87	82.68	84.08	86.09	86.43	87.88

Caa2

Percentile	1	2	3	4	5	6	7	8	9	10
0.9999	24.06	53.57	66.25	60.76	89.40	64.30	66.75	85.98	90.60	92.32
0.9995	26.09	59.49	58.49	72.98	74.26	75.64	72.71	84.11	76.68	78.40
0.999	26.96	62.12	65.03	60.86	84.38	73.38	79.47	77.27	83.17	76.89
0.9975	30.27	63.33	59.75	68.62	72.29	80.11	75.02	84.58	77.50	84.14
0.995	32.68	61.36	64.59	65.44	73.58	76.62	79.99	84.58	80.50	84.49
0.9925	34.45	60.55	65.54	65.81	72.69	77.61	80.11	84.34	82.03	82.33
0.99	35.57	60.79	65.45	65.77	74.68	75.64	81.03	83.48	83.27	84.20
0.985	37.45	61.23	64.97	68.15	72.49	77.63	80.55	82.23	85.11	81.84
0.98	38.63	61.62	66.19	68.33	72.79	79.24	79.24	82.48	83.59	82.44
0.97	40.83	62.07	66.76	68.01	74.26	80.11	80.25	81.45	83.41	82.43
0.96	42.36	62.65	66.73	69.33	73.30	81.17	80.38	82.51	81.33	83.41
0.95	43.87	62.77	67.16	69.04	74.16	80.39	80.73	82.41	82.03	83.57
0.94	45.10	63.11	67.24	69.23	74.81	79.47	81.10	82.42	82.41	83.55
0.93	46.19	63.78	67.05	69.38	75.08	80.13	80.70	82.89	82.46	82.95
0.92	46.94	64.22	67.56	69.61	75.12	79.94	81.32	82.56	82.63	83.38
0.91	47.83	64.29	68.00	69.32	75.53	79.86	81.38	82.97	83.14	83.42
0.9	48.43	64.73	68.17	69.48	75.71	80.27	81.27	82.83	83.47	83.26

Caa3

Percentile	1	2	3	4	5	6	7	8	9	10
0.9999	15.37	50.40	58.95	50.69	69.65	73.67	58.42	72.42	50.81	85.14
0.9995	17.20	47.28	53.91	57.25	54.91	68.07	64.06	68.77	62.51	81.83
0.999	17.92	56.21	45.76	56.55	57.17	79.52	59.96	71.44	61.12	86.21
0.9975	20.12	50.50	49.25	50.68	66.88	67.44	73.71	65.42	79.69	68.31
0.995	21.41	51.33	50.61	53.57	64.19	71.73	74.87	75.18	70.72	64.83
0.9925	22.12	53.52	52.93	52.84	62.25	72.14	75.32	73.41	75.15	68.44
0.99	22.63	52.57	54.34	54.21	62.30	73.23	73.14	75.24	73.52	73.25
0.985	23.68	53.63	54.51	53.38	62.67	76.02	72.96	73.85	73.71	74.69
0.98	24.68	52.47	55.93	53.03	64.20	74.09	74.45	73.63	74.34	75.85
0.97	26.08	52.74	55.64	54.98	64.06	71.77	77.86	74.50	73.59	75.41
0.96	27.09	53.11	56.17	56.06	64.67	73.15	74.60	75.87	74.57	76.65
0.95	28.07	53.40	55.69	57.02	65.34	73.06	75.35	76.00	74.69	75.58
0.94	28.92	53.67	56.03	57.58	64.77	73.75	76.28	75.53	74.67	75.03
0.93	29.65	53.84	56.93	56.99	65.66	73.07	77.03	74.99	75.33	75.73
0.92	30.28	54.04	57.54	57.39	65.87	73.68	76.05	75.44	75.07	76.50
0.91	30.88	54.11	57.60	58.02	65.49	74.25	76.13	75.68	75.06	76.77
0.9	31.44	54.41	57.30	58.54	66.35	74.28	75.43	76.11	74.39	76.88