



NCUA
National Credit Union Administration

Range of Practice – Capital Planning and Analysis

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Range of Practice – Capital Planning and Analysis • 2023

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Executive Summary

After each annual capital planning and stress testing cycle, the Office of National Examinations and Supervision (ONES) publishes a range of practice (ROP) white paper identifying leading and lagging practices observed through its review of capital plans. The ROP document enhances transparency and supports the iterative improvement of credit union capital planning.

While the economic and financial challenges specific to the COVID-19 pandemic and associated responses largely subsided leading into 2023, rapid increases in market interest rates and recessionary fears represented new threats to credit unions earnings, capital, and liquidity. Accordingly, this year's ROP document focuses heavily on discussing emerging topics related to capital planning and analysis as well as observations of leading and lagging approaches to assessing and quantifying interest rate, liquidity, and credit risks as identified in 2023 capital plan submissions. Whereas observations of leading and lagging practices in this year's ROP are not all inclusive, we encourage credit unions to continue to refer to prior years' versions of the ROP white paper for a broader discussion of leading, lagging, and expected practices related to capital adequacy assessment and planning.



Emerging Topics

Applying Current Expected Credit Loss (CECL) Accounting in Capital Planning and Supervisory Stress Testing (SST)

In the 2022 ROP white paper, the NCUA provided initial guidance regarding applying CECL when conducting internal capital adequacy assessments and SSTs. In issuing that initial guidance, the NCUA confirmed its understanding of the complexities involved with transitioning to the CECL methodologies for credit loss reserving, not only for financial statement purposes but also for forward-looking forecasting utilized in producing annual strategic and capital plans and SSTs. Accordingly, the NCUA, like other prudential regulators, chose not to dictate a specific approach for forward-looking forecasting and including CECL-based loss estimates for capital planning and supervisory stress testing purposes. Instead, the NCUA only required covered credit unions to account for the “day one adjustment” to their allowance for credit losses and net worth in forward-looking capital plans and SSTs produced in the first quarter of the scenario forecast (or the first quarter of a credit union’s 2023 fiscal year-end if the credit union does not have a calendar fiscal year), beginning with 2023 capital plans and SSTs.¹

The NCUA’s review of covered credit union capital plans and SSTs completed through August 31, 2023, noted successful compliance and integration of expectations set forth in the 2022 ROP white paper. In alignment with other prudential regulators, the NCUA is extending these practice expectations for the 2024 capital planning and SST cycles for covered credit unions. Any future change in expectations will be communicated in writing to covered credit unions. In the interim, covered credit unions are encouraged to access and revisit the guidance provided in the 2022 ROP white paper.²

Reporting of Capital Analysis Results Using Standard Form Templates

To enhance accuracy, quality, and efficiency of covered credit unions’ submission of annual SST results, the NCUA has published updated standard form templates and

¹ The NCUA issued guidance regarding CECL implementation is available at <https://ncua.gov/regulation-supervision/regulatory-compliance-resources/cecl-resources>.

² Guidance papers related to Capital Planning and Stress Testing can be accessed at <https://ncua.gov/regulation-supervision/regulatory-compliance-resources/capital-planning-stress-testing-resources>.



instructions for collecting credit union self-run SST results for 2024. Revisions to the standard form collection templates were based on feedback from credit unions participating in the 2023 SST engagement, as well as comments received to the public notice published in the Federal Register. Although the NCUA’s ONES notified credit unions of the proposed changes in a letter to all Tier II and III³ credit unions October 24, 2023, we wanted to revisit some of the important aspects related to both self-run SST and submission of internal capital analysis results as part of this annual practice guidance.

The reporting templates were updated to better accommodate the incorporation of CECL in reporting, making it easier to confirm the Call Report data, clarifying the instructions, and expanding the data dictionary for all fields.

Another important change is the expected use of standard form reporting templates for communication of results of internal capital analysis in addition to self-run SSTs. To apply more consistency to the NCUA’s review of internal scenario-based capital analysis completed by Tier II and III credit unions, the NCUA is requiring Tier II and III credit unions to utilize the SST reporting templates to communicate results and details associated with internal capital analysis. The NCUA acknowledges the requirement to standardize reporting of internally developed capital analysis forecast results, assumptions, and details may require some initial burden on the part of participating credit unions. However, capturing credit union capital planning scenario results using the templates will reduce the burden on participating credit unions during review of their annual capital analysis and planning. Further, use of the standardized reporting templates will also enhance our ability to fairly and consistently evaluate the strength of forecasting and analysis techniques applied in covered credit union capital analyses and planning.

³ Capital Planning and stress testing requirements under Sub-Part C of the NCUA’s Rules and Regulations are tailored based upon credit union size and complexity. See NCUA Rules and Regulations Part 702, Sub-Part C.



Use of Loss Absorbing Capital Measures and Actionable Capital Planning

Use of Loss Absorbing Capital Measures

Section 702.304(b)(1) of the NCUA’s Regulations requires a credit union’s capital plan to include a “quarterly assessment of the expected sources and levels of **stress test capital**⁴ over the planning horizon.” Similarly, Section 702.304(b)(2) requires the capital plan to identify how “under expected and unfavorable conditions, maintain stress test capital commensurate with all of its risks, including reputational, strategic, legal, and compliance risks.”

When drafting the original regulation, the NCUA defined stress test capital to include a deduction of the National Credit Union Share Insurance Fund deposit to represent a more appropriate “loss absorbing measure” of capital than regulatory net worth⁵ alone. Notwithstanding, the regulatory stress test capital measure is subject to some limitations in providing a broad indicator of the loss absorbing capacity of credit union capital. As a leading practice when conducting capital adequacy assessment, credit unions should determine and define within their capital policy, measures that best represent the total loss absorbing capacity of capital given their unique business strategies and balance sheet composition. This could include further refining the definition of stress test capital to include certain capital components such as unrealized gains and losses on securities that can have a positive or negative impact on the loss absorbing capacity of capital and removing other intangible components of capital such as goodwill, which do not.

Leading credit unions reported capital analysis results in terms of stress test capital in accordance with the regulation but also identified the limitations of use of regulatory capital measures for purposes of understanding capital adequacy in both actual performance as well as forward-looking capital analysis. These credit unions, as part of the governing policies over capital planning, evaluated the overall risk profile of their business strategies and balance sheet composition, and identified alternative and additional measures of capital that better demonstrate loss absorbing capacities of

⁴ Per Section 702.302 of the NCUA Rules and Regulations, stress test capital means net worth (less assistance provided under Section 208 of the Federal Credit Union Act, subordinated debt included in net worth, and NCUSIF deposit) under stress test scenarios.

⁵ As defined in Section 702.2 of the NCUA Rules and Regulations.



capital as compared to the regulatory definitions of net worth and, in some cases, stress test capital.

Lagging credit unions continue to limit the scope and breadth of capital adequacy assessment by focusing solely on regulatory capital definitions such as net worth or stress test capital when producing comprehensive capital analysis and comparing results of that analysis to policy triggers and limits. These credit unions did not demonstrate an awareness of how the relative loss absorbing capacity of the capital measures being used could be measured given the uniqueness of their business strategies and balance sheet composition.

While it is a regulatory requirement for covered credit unions to produce an annual capital adequacy assessment and plan, the exercise should be integrated into the broader risk management framework of the credit union. The use of capital measures that more effectively account for the ongoing loss absorbing capacity of capital demonstrates a more robust risk management-centric approach to capital planning as opposed to mere compliance with a minimum regulatory standard. Leading credit unions have successfully identified this distinction and evolved standards and measures for assessing capital adequacy to include components of capital demonstrating true loss absorbing capacity and eliminating components that do not, under a broad range of scenarios.

Actionable Approaches to Capital Planning

Review of 2023 capital plan submissions continue to signal Tier II and Tier III credit unions' application of reactive approaches to capital planning. These observations were particularly troubling given the prior year capital analyses completed by these credit unions indicated earnings, capital, and liquidity would suffer under inflationary economic conditions. Our review noted the lack of sufficient actions taken in response to those analyses to address risk concentrations --- leading to less than desirable outcomes. As inflationary conditions continued to persist through 2023, many of those same credit unions are now demonstrating moderate to heavy pressure to earnings and capital formation, as loss provisions have increased, and availability of affordable sources of funding and liquidity has tightened. Given these observations, we wanted to revisit the concepts of “proactive” and “reactive” approaches to capital analysis and planning communicated in prior-year ROP white papers.

Leading credit unions have integrated capital planning principles and practices into the larger risk management and strategic planning activities of the institutions. In these credit unions, capital analysis both informs and is informed by ongoing risk assessment and strategic planning activities. Ongoing risk assessment activities are used to identify emerging and material risks which could threaten the institution's earnings, capital, and



liquidity; and forward-looking stress testing and capital analysis is then used to explore the manner and magnitude in which these risks could materialize as strategic endeavors and operating conditions may change.

After using capital analysis to inform minimum required thresholds with respect to capital and liquidity, leading credit unions then monitor and manage to those thresholds by establishing risk limits and capital policies with forward-looking and actionable triggers. This enables a rapid and proactive response to changing economic or business conditions using capital analysis and assessments as the primary tool for managing capital and liquidity needs on a continuous basis.

For example, leading credit union policies require the board and management to invoke contingency actions, such as amending strategies and exploring mitigating action to observed escalations in risk, in response to material, plausible forward-looking capital analysis results produced by management. This proactive approach to the use of capital analysis more effectively limits capital sensitivity to risk in the event of distressed economic or business scenarios.

Evaluating the need for an additional capital buffer has been noted as particularly helpful as a potential policy response to threat of high risk, low probability, “black swan” type events. Other leading observations noted credit unions using forward-looking capital analysis to inform the board and management in their decision to establish additional capital buffers to account for high severity type economic and environmental stresses such as those experienced during the Great Recession, COVID-19 pandemic or, more recently, aggressive monetary policy moves initiated by the Federal Reserve.

Conversely, credit union policies relying on actual performance and balance sheet positions to trigger capital actions required by policy consistently react more slowly to economic stress and changes in business conditions. This reactive policy approach left some credit unions more vulnerable during the Great Recession, at the onset of the pandemic, and to the recent increase and flattening of the yield curve. This ignores the value and use of forward-looking analysis as part of an effective strategic decision-making framework.

As credit unions migrate from Tier I to Tier II and III status, the NCUA expects capital policies and management practices to mature and allow for more actionable approaches to managing capital and risk in a forward-looking manner. This can be accomplished by more proactively utilizing both the hypothetical scenario analyses serving as the foundation of the capital plan, and then performing ongoing monitoring of actual



performance when evaluating adequacy of earnings, capital, and liquidity against various policy limits and triggers.

Comprehensive Capital Analysis

Previously issued NCUA guidance related to capital planning has emphasized that reasonable and conservative capital analysis is a crucial component of the capital planning process and is a critical element of risk management for credit unions.

Given the important role capital analysis plays in not only informing ongoing business strategies, but also risk tolerances related to those strategies, the NCUA expects capital analysis to be conducted in a manner that is forward looking, well documented, and approached with conservatism in mind. Alternatively stated, capital analysis should be approached from a mindset of “what could happen” to credit union performance when conditions change, as opposed to a mindset of “what we think will happen,” which is more akin to a strategic planning approach.

Accordingly, the practice of estimating, forecasting, and stress testing applied in the capital analysis process should be subjected to independent and effective challenge to the credit unions’ capital throughout the process. Additionally, estimates and analytical approaches should be subjected to robust sensitivity testing to ensure they capture a statistically significant range of alternative outcomes that can provide users of the analysis with valuable information regarding possible capital actions or changes in business strategy to be considered.

Given the significant change in market conditions leading up to the production of 2023 capital plans and analysis, the importance of thoroughly vetting forecasting approaches and expanding scenario and sensitivity analysis has never been greater. In 2023, capital plans emphasized evaluating adequacy of capital and liquidity under persistent higher market interest rate conditions, as well as the potential for a modest recession because of the Fed’s ongoing efforts to tighten monetary policy.

Concurrent with ongoing market and interest rate risk pressures, the NCUA has observed increasing trends relative to both consumer delinquency and net charge off rates during 2023. While all credit unions incorporated credit risk-related stresses to capital through recessionary type scenario forecasts, as noted in more detail below, in some cases the conservatism of credit loss forecasting techniques raised questions.



Given the significant changes observed in credit union interest rate risk profiles, as well as increasing credit risk indicators, the NCUA's reviews of 2023 capital plans were focused accordingly. Capital plan reviews conducted during 2023 included a heavy emphasis on the breadth and conservatism with which forecasting and estimation techniques were applied to interest income, interest expense, and loan loss provisioning and will continue to be areas of increased emphasis in 2024 and beyond.

Capital Sensitivity to Interest Rate Risk

Recent increases in market interest rates have added pressure on credit union earnings, capital, and liquidity. In response, most credit unions as well as the NCUA have identified the assessment and management of interest rate risk as a strategic and supervisory priority. Accordingly, all capital plans produced and reviewed in 2023 did, to some extent, further explore the impact of higher market interest rates on the adequacy of capital and liquidity. We highlight below some of the leading and lagging approaches observed with respect to scenario design, estimation techniques, and sensitivity analysis applied in the 2023 capital plans to better understand and explore impacts of interest rate risk over the various planning horizons.

Scenario Design and Selection

Given current market conditions, most credit unions incorporated a rising rate, or “rates higher for longer” scenario as part of their 2023 capital adequacy assessment and plan. In many cases these scenarios were aligned with various third-party consensus estimates of the future path of interest rates over the scenario horizon (normally the next 9 to 12 quarters). A potential weakness observed in the use of third-party consensus estimates for purposes of capital adequacy assessment is the scenario paths selected in this manner represent a best efforts “prediction” of the path of interest rates at the time they are selected. In the case of 2023 capital planning, these consensus rate forecasts, including the Federal Reserve's Baseline scenario, were anchored to economists' views of the future path of interest rates as of late 2022 or early 2023. At that time most economists expected the Federal Reserve's Open Market Committee to continue with rate increases through the second quarter of 2023, then transition to a modest recession and rate cutting campaign beginning in mid-late 2023 and over the remainder of the scenario horizon through 2025.

While using consensus rate forecasts for purposes of ongoing strategic planning and budgeting may be a sound approach, the exclusive use of these forecasts may limit the full exploration of the resiliency of capital and liquidity to severe and sustained volatility in yield curves. Leading credit unions compensated for this limitation by incorporating additional scenario analysis over and above consensus rate forecasts. In



some cases, this included using the consensus rate forecasts as a starting point but adjusting the slope of the yield curve in latter quarters of the scenario horizon to simulate and understand financial performance if subjected to a “higher for longer” path of rates through the end of the scenario horizon. This approach allowed for a more long-term view of the adequacy of liquidity and capital in response to an increased and upward sloping yield curve of sustained duration and magnitude.

Alternatively, other leading approaches included detaching from the use of consensus forecasts altogether. These approaches developed additional rate paths for stress testing purposes that were most informative of the institutions’ ability to maintain capital and liquidity within tolerance limits. Rate volatility was applied in a manner of significant magnitude and duration throughout the scenario horizon.

Share Growth and Mix Assumptions

Another area where both leading and lagging approaches were observed was in the estimates applied to growth and migration of share balances over the scenario horizon, and their impact on the usefulness of the capital analysis in exploring capital sensitivity to interest rate risk.

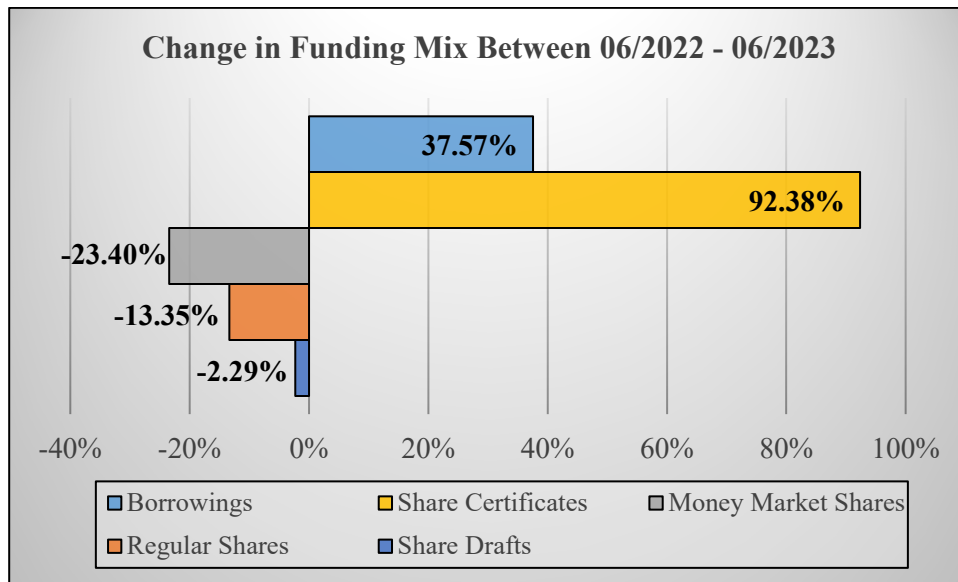
Cost of funds is a core element of earnings which credit unions have not had to be overly concerned with since the Great Recession, as both short- and long-term interest rates have generally remained below the capitulation level at which depositors have demanded a market-based rate of return on their savings held at banks and credit unions. Over the past two years, as both short- and long-term interest rates have risen to levels not seen in almost 20 years, this dynamic has changed significantly. The combination of higher rates, more competition for liquidity coming from both within and outside the traditional financial system, as well as advances in electronic payments services that allow depositors to transfer savings quickly and easily to competing alternatives, have raised the bar with respect to forecasting of funding costs. Financial institutions have been challenged to reassess both funding strategies as well as the way forward-looking planning is used to assess liquidity needs and the potential cost of that liquidity.

When forecasting interest expense for purposes of interest rate risk analysis, strategic planning, and capital planning, credit unions must account for and explore many factors affecting cost of funds. One of those factors is the anticipated migration and mix of both on- and off-balance sheet sources of liquidity over the planning horizon. Until recently, credit unions were able to anticipate a somewhat linear relationship between historical performance and anticipated growth and mix of shares for purposes of



strategic planning and risk management activities. As described above, somewhere over the period of the recent rate cycle, depositors reached a capitulation point where behaviors became more sensitive to rates of return received on their savings balances. This can be seen in the growth and migration trends observed in the credit unions' funding mix during the period June 2022 to June 2023 as depicted in Figure 1.

Figure 1



As demonstrated in Figure 1 above, between June 2022 through June 2023, credit unions supervised by ONES saw significant movement out of lower-yielding overnight share accounts into higher-yielding share certificate accounts and wholesale borrowings. Additionally, during the period, total shares and deposits grew by only 2.62 percent, while additional reliance was placed on borrowings to fund operations. Growth in borrowings during the period of rising rates was significant at 37.57 percent. These trends indicate the traditional forward-looking forecasting of balance and mix may no longer be approached in a linear way. Instead, a certain degree of convexity now exists within members' sensitivity to rate changes. During periods of significant market interest rate volatility, the relative magnitude of the shift in both sources and costs of funds demonstrates the presence of increased sensitivity.

The key takeaway here is these trends may indicate rate sensitivity escalating within the member deposit base to an extent not seen before by the current management teams. Some of the migration from lower cost overnight accounts to higher cost certificate accounts were encouraged by credit union management through strategic pricing of promotional certificate offerings aimed at separating rate sensitive balances out of



overnight accounts and keeping those funds on balance sheet without needing to significantly increase rates on all regular share, money market, and other overnight accounts.

Leading credit unions understand assumptions applied to growth and mix of deposit balances over the planning horizon need to be approached with conservatism in mind, particularly during a period of significant volatility like that shown in Figure 1. These credit unions did not presume they had successfully segregated all rate sensitive balances out of overnight deposit balances. These credit unions incorporated additional sensitivity and scenario analysis within their capital analysis planning to understand the marginal costs and liquidity implications of member balances growing increasingly rate sensitive under conditions where higher rates were sustained over a portion or the entire planning horizon. These credit unions supported their assumptions by analyzing share migration trends that had occurred leading up to the effective date of the analysis and utilizing that information as a starting point to estimate the way these trends would continue, escalate, or decline depending upon the proposed path of interest rates over the planning horizon. Conversely, lagging credit unions assumed balances that were going to migrate had already migrated, and assumed declines in non-maturity balances would rebound even under scenarios that assumed rates would continue to rise over a portion or the entirety of the planning horizon.

Other leading approaches applied additional sensitivity analysis to share growth and balance mix assumptions. Leading credit unions understood that trying to predict member behaviors during unprecedented times would not result in full exploration of the potential downside risks of marginal costs of maintaining funding at planned levels. These credit unions explored ranges of performance under various rate curves and funding mix assumptions and sensitivities and did not tie decision making to one view or scenario.

Lagging credit unions failed to explore other alternative outcomes related to growth and balance mix assumptions. Instead, these credit unions relied solely on single-point estimates applied across all scenarios as the foundation of their capital analysis. Approaches such as this limit the institutions' abilities to fully understand how share growth and funding mix estimates and assumptions impact marginal cost, earnings, capital, and liquidity.

Share Repricing Betas

Historically, credit unions have placed significant reliance on non-maturity share accounts to fund lending and investing activities. Given this inherent concentration risk



within the credit union business model, repricing assumptions applied for the purpose of strategic and capital planning, as well as earnings at risk analysis, represents one of the most material assumptions applied when conducting these analyses. Given the length of time that has passed since the last significant increase in market interest rates, and advances in the ability and speed with which members and customers can move balances in response to competition, attempting to predict member behaviors under a significant and sustained increase in market rates has become increasingly challenging. Prudent risk management and capital analysis should expand the breadth of scenario and sensitivity analysis conducted, and not tether results of risk and capital analysis conducted to a singular perspective or assumption regarding members' rate seeking behaviors when upward or downward volatility in market rates is anticipated.

Observations of increased sensitivity in members' rate seeking behaviors leading up to the production of 2023 capital analysis emphasized the need for credit unions to revisit repricing assumptions, or betas, applied to non-maturity share accounts for purposes of producing forward-looking capital analysis and planning. As part of NCUA's review of 2023 capital plan submissions, review of beta assumptions applied in forward-looking analysis was an area of enhanced focus.

In many cases, credit unions generally ignored observations of increased sensitivity in member behaviors and maintained use of betas derived using deposit studies predating the recent increase in market interest rates. In other cases where credit unions did revisit repricing assumptions, the NCUA's review concluded the repricing factors were reduced or changed from a dynamic to static application of repricing factors regardless of the relative change in reference rate. This essentially slowed the anticipated repricing of share accounts under scenario analysis which assumed rising interest rates when the exact opposite was being observed under recent performance. These approaches both significantly reduced the conservatism of the capital analysis conducted and were considered a lagging approach to risk assessment and measurement applied in the capital analysis.

Leading credit unions understood that an equilibrium or capitulation rate had been reached sometime over the recent cycle of increasing rates. These credit unions expanded scenario and sensitivity analysis to explore and understand how variation in anticipated repricing of shares under both rising and falling rates may impact the outcomes of the capital analysis.

Other leading approaches observed applied beta assumptions in a dynamic, as opposed to static, way when conducting forward-looking forecasting under scenario paths that assumed continued or sustained increases in market interest rates. These credit unions



understood that as market rates reached a certain equilibrium or capitulation level, other risk-free alternatives for member savings would present themselves, and competition to maintain member deposits on balance sheet would be elevated. These credit unions revisited beta assumptions used for purposes of ongoing interest rate risk and capital analysis and applied a dynamic approach to repricing of non-maturity shares depending upon the magnitude and steepness of the increase in market yields available to members. This essentially increased the marginal cost of maintaining liquidity over the forward-looking planning horizon which was considered a more conservative approach to planning as compared to the use of a static beta applied under all rate path conditions.

Other leading approaches used additional scenario and sensitivity analysis to better explore and understand alternative outcomes of the capital analysis in the event fundamental beta assumptions applied proved to be inaccurate. These credit unions ran and re-ran various scenarios using varying assumptions applied to non-maturity share repricing to better understand the marginal costs of maintaining on balance sheet liquidity within stated needs and tolerances.

Credit Loss Forecasting

Conservatism of approaches applied to loan loss forecasting within the capital analysis remained an area where lagging approaches to both modeling, review, and challenge of outcomes continued to be observed.

ONES continued to identify credit loss forecasting approaches and results that lacked conservatism and did not align with the economic variable paths applied during the analysis. These estimates also did not align with recent and pre-pandemic performance of certain portfolios. This raised concern with not only the forecasting approaches applied, but also with the strength of effective challenge applied to results by oversight committees and second- and third-line risk management functions involved in the analysis.

In most cases where modeled loss forecasts appeared optimistic in relation to both recent and pre-pandemic performance, credit unions limited their analysis and explanation of results. Where analysis results were identified as lacking conservatism, the most common response or explanation noted in review committee meeting minutes, or of the capital plan itself, was that models were providing reasonable forecasts as compared to past performance because of tightened underwriting standards put in place after selection of the estimation data set used in model development. In these cases, credit unions were generally unsuccessful in providing any type of supporting analysis to substantiate these claims even if they were indeed valid.



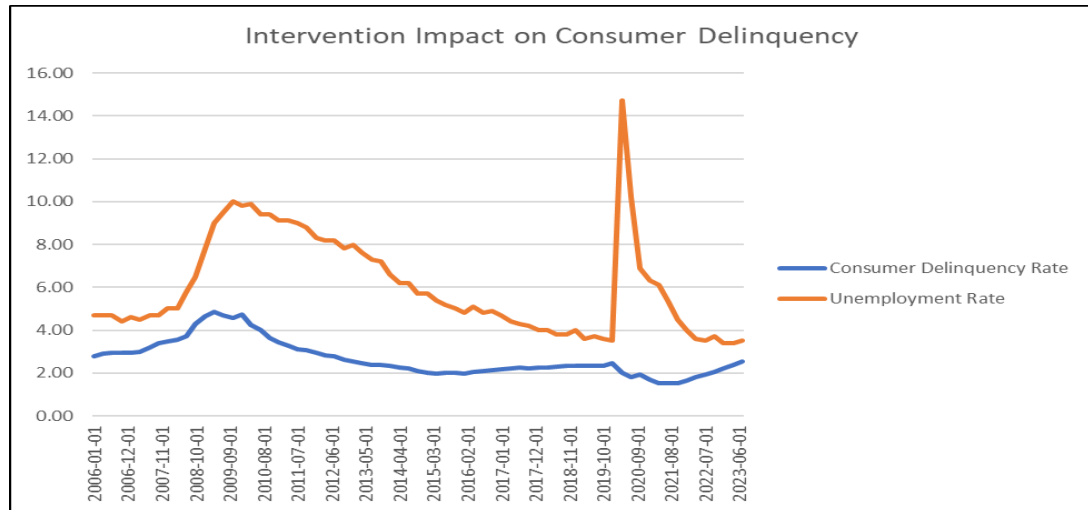
A more reasonable explanation is that the models were providing increasingly optimistic forecast results under adverse scenario conditions that could be traced back to the lingering effects of borrower intervention occurring during the pandemic. Although not an all-inclusive list, the NCUA identified three potential reasons consumer loan models may be producing less than conservative forecasts. These less than conservative forecasts should be subject to additional review by model risk managers or model overlays as part of the capital and strategic planning process:

6. Increasingly, credit unions have chosen to no longer omit performance data from the pandemic period as part of initial model development and annual model calibration and tuning activities. As discussed in the prior year ROP guidance, borrower intervention strategies applied at both the governmental and institutional levels in response to pandemic-related employment disruptions artificially reduced borrower default and loss rates. This dynamic can be seen in Figure 2 which compares the unemployment rate to consumer loan delinquency observed between January 2006 and May of 2023. As seen in the chart, despite an increase in U.S. unemployment to a peak rate of 14.7 percent in April of 2020, consumer loan delinquency rates fell to levels well under 2 percent through the third quarter of 2022⁶. Once the pandemic period intervention was discontinued, delinquency rates began to rise as unemployment rates continued to fall.

⁶ SOURCE: Federal Reserve Bank of St. Louis, FRED, Delinquency Rate on Consumer Loans, All Commercial Banks, Percent, Quarterly, Seasonally Adjusted



Figure 2



Between April 2020 and the fourth quarter of 2022, the traditional correlation between unemployment rates, loan defaults, and delinquency was artificially interrupted because of loan payment deferrals, modifications, and governmental stimulus payments made to consumers. Whereas most models use the unemployment rate as a primary independent variable informing estimates of default, credit unions utilizing data observations during this period to “tune” models on a go-forward basis will likely underestimate default forecasts under both baseline and adverse economic conditions. This is an outcome ONES’ recent review of capital plans has confirmed.

NCUA does not dictate whether a credit union should incorporate pandemic period data into its ongoing model development, calibration, and tuning activities, credit unions who choose to do so should understand the implications. Decisions to include this data need to be supported by performing and documenting additional model back testing, performance testing, and benchmarking to identify the extent to which using this data may distort model forecasts.

Leading credit unions identified these issues early on during the pandemic and chose to omit that data as part of their ongoing model development and calibration activities. Other leading approaches observed where the data was included in development, and calibration activities have used challenger models to understand the impact of inclusion or exclusion of this data on forecast outcomes and then applied model overlays to ensure loss forecasts used for purposes of capital adequacy assessment are conservatively presented and used in ongoing risk and strategic planning decisions.



7. Average consumer FICO scores are artificially elevated due to pandemic stimulus and relief programs; potentially contributing to overly optimistic default and charge off forecasts.

Recent analysis conducted by ONES to analyze trends with respect to credit risk emergence notes that while average credit scores have largely trended upwards as economic conditions improved following the Great Recession, credit scores increased by a greater magnitude after the onset of the COVID-19 pandemic. This increase in upward trends of credit scores occurred despite the significant economic, social, and logistical disruptions caused by the pandemic. It is arguable that a significant portion of the post-pandemic increase in average credit scores likely reflects the Coronavirus Aid, Relief and Economic Security (CARES) Act's forbearance, loan modification, and economic stimulus provisions. After the CARES Act's passage, delinquency rates fell, while the proportion of loans in forbearance and the number of loans modified rose sharply across both banks and credit unions. The CARES Act provided substantial income support through supplemental unemployment insurance, stimulus payments, and forgivable Paycheck Protection Loans. Along with a reduction in consumption among higher income households, these stimulus payments led to a substantial increase in excess savings in 2020 and 2021, providing consumers with the ability to build an economic buffer, and potentially leading to one-time support in managing debt service acquired prior to and during the pandemic. These intervention activities and resulting economic buffer have likely led average credit scores to become somewhat inflated as we exit the pandemic.

Whereas most consumer loan loss forecasting models rely heavily on credit score as a primary independent variable informing default and loss probabilities, it is possible the impact the pandemic period intervention and relief activities had in temporarily increasing consumer credit scores, could translate to overly optimistic forward-looking loss forecasts produced for purposes of ongoing credit risk, strategic planning, and capital analysis.

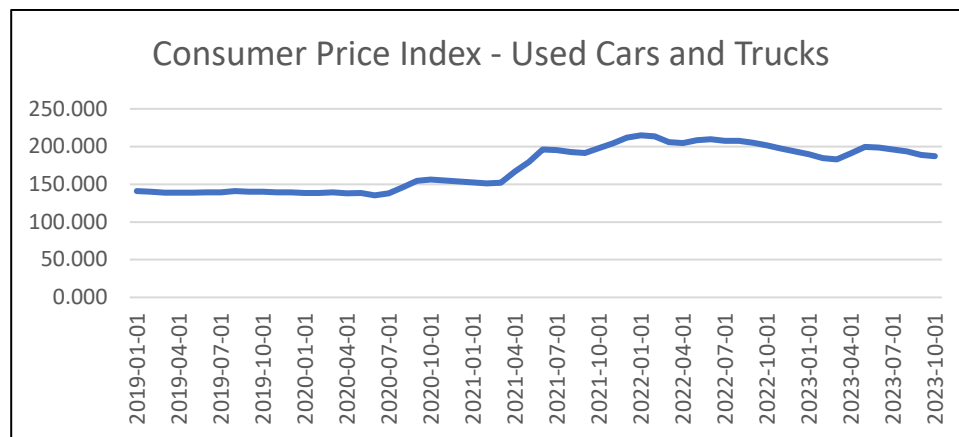
Moving forward, we encourage credit unions to perform similar analysis of trends observed in member credit scores, both pre- and post-pandemic, as part of their ongoing model review and risk management activities. Where considered necessary, model overlays can be used to compensate in the event out-of-the-box model forecasts are deemed overly optimistic in relation to the economic variable path applied in stress test analysis and as compared to recent and pre-pandemic portfolio performance.



8. Lastly, our review of 2023 capital plan submissions noted forward-looking loss forecasts related to new and used auto portfolios that did not align with both recent and pre-pandemic performance. We observed that the used vehicle market valuations reflected another pandemic-related factor that could challenge loss forecasting for auto loans.

Used vehicle prices increased sharply during the pandemic for reasons including, but not limited to, a reduction in the supply of vehicles and an increase in disposable income from government stimulus funds for low- to middle-income households. The combination resulted in vehicle prices rapidly increasing by 54.81 percent between July 2020 and February 2022, to a peak CPI level of 213.7. As vehicle production returned to pre-pandemic levels and the availability of stimulus funds declined, used car prices have since decreased by 12.38 percent to a CPI level of 187.3 as of October 2023. These trends are graphically detailed in Figure 3.⁷

Figure 3



Through a combination of increased production of new autos, normalization of supply chain disruptions, phase out of pandemic period consumer assistance, and significant increases in loan rates, values of used autos are now declining, and loans originated during the height of the price escalation period could be exposed to increased severity of loss. Auto loans originated during the period between July 2020 and December 2021 saw the most significant price escalation, and with recent decreases in used vehicle pricing and values, could result in a significant portion of loans originated during that period being secured by “underwater” collateral. Loans

⁷ SOURCE: Federal Reserve Bank of St. Louis, FRED, Consumer Price Index for All Urban Consumers: Used Cars and Trucks in U.S. City Average.



originated during this period could pose higher default and loss risks for credit unions going forward.

Estimates of loans underwater, and their potential impact on forward-looking loss forecasts, are highly dependent upon the loan-to-value (LTV) ratios provided by the credit union. ONES recently conducted analysis that attempted to assess the reasonableness of credit union LTV calculation methods. Using quarterly aggregates of Experian Auto's monthly AutoCount⁸ data from 2016 Q4 to 2019 Q1, the analysis inferred LTVs reported by credit unions could be significantly lower compared to the estimates in the AutoCount database in some cases. A failure to frequently re-assess and maintain accuracy of LTVs in the underlying data set upon which loan loss models are developed and maintained, could result in less than conservative loss severity estimates applied when conducting capital adequacy assessments.

Given these high-level observations, ONES encourages credit union modeling staff, and review and oversight bodies responsible for challenging modeling approaches and outcomes, to revisit approaches for calculating, recording, and use of LTV estimates for purposes of risk and capital analysis related forecasting. When producing forward-looking forecasts related to default and loss, it is important that credit union staff both responsible for production, review, and challenge of auto loss forecasts used for purposes of capital adequacy assessment are aware of the recent volatility in both new and used auto prices. Models should be re-assessed frequently and updated with the most recent price index data which are often used as an independent variable in forecasting both default and severity of loss, whereas pandemic-related increases in new and used auto values may only be temporary and could result in underestimation of loss forecasts if the underlying data informing the models' estimations is not refreshed or well understood by model owners and users.

Effective Challenge of Capital Analysis Results

The identification of counter intuitive, unreasonable, and insufficiently conservative capital analysis associated with the lagging practices referenced above, can be symptomatic of a review and challenge process not functioning as intended. As we have communicated in previous ROP white papers, most credit unions' governing frameworks over capital planning processes are sufficient to provide for appropriate

⁸ Experian Automotive constructs an AutoCount database using a combination of data from the Department of Motor Vehicle in nearly all U.S. states and credit score data from Experian to provide lender-level information about auto loan originations.



challenge and review points. In practice, however, we continue to observe instances where the review and challenge applied to capital analysis approaches and results are not functioning as intended. This is normally associated with credit union cultures that tend to conflate strategic business planning with risk assessments and analysis used for purposes of capital adequacy assessment. These credit unions tend to approach assessment of risk under a single expected path of outcome, as opposed to placing value on varying perspectives on risk when conducting capital analysis and strategic planning activities. Corporate cultures that discourage alternative perspectives on risk that may conflict with strategic business initiatives tend to demonstrate overly optimistic capital assessments in both expected and unfavorable scenario analysis. This limits the effectiveness of the exercise in managing capital relative to risk in an ongoing actionable manner.

Conversely, the NCUA continues to observe that governance cultures which foster independent critical challenge:

- Improve the reliability and conservatism of analysis results;
- Aid an understanding of analytical limitations;
- Identify areas for improvement in the capital analysis framework;
- Ensure the use of results is consistent with the framework's objectives; and
- Foster more effective integration and alignment of capital adequacy assessments with the credit union's ongoing strategic and risk management activities.

To foster conservative and transparent capital analysis as well as accurate and timely reporting, the review and challenge process should be vetted as part of periodic validation and internal auditing engagements. Additionally, credit union boards should also ensure the review and challenge process is not being obstructed by cultural factors favoring analysis outcomes that support ongoing business strategies in lieu of gaining a more thorough understanding of potential capital at risk.

Conclusions

As post-pandemic inflationary and potentially recessionary pressures continue to raise uncertainties regarding the macroeconomic environment in which credit unions may be operating for the foreseeable future, the NCUA expects credit unions to continue utilizing and adapting their capital analysis and assessment practices. Credit unions should leverage core enterprise functions and oversight to ensure useful, conservative, and transparent capital stress testing and financial forecasting to inform ongoing strategic and risk management action plans. The principles and practices detailed in this



white paper will assist credit unions in deploying progressively more useful capital assessment and planning activities moving forward.