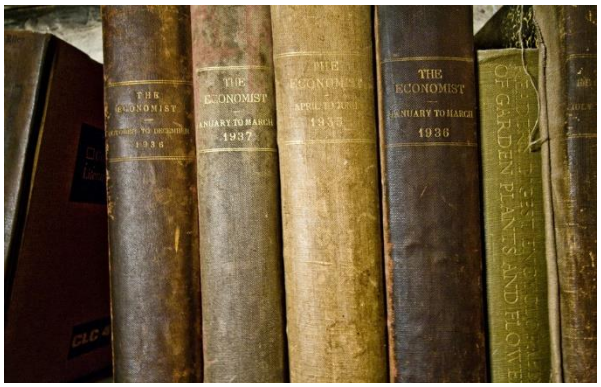

MRM AND THE CECL STANDARD

ABSTRACT

The transition to the new accounting standard for estimating credit losses will require financial institutions to revise or develop new models and adapt their model risk management program. Effective credit loss modeling development under a CECL program must integrate predictive modeling, analytics, advanced data management, and accounting principles. Because CECL models are different from previously developed models, model validation must be adjusted.

ECON | Analysis, LLC

January 2020

MODEL RISK MANAGEMENT AND THE CECL STANDARD: **CHALLENGES FOR FINANCIAL INSTITUTIONS**

1. Introduction

In recent years, the importance of Model Risk Management ("MRM") in the financial services industry has increased dramatically. An increasing reliance on models coupled with increasing regulatory challenges required banks to invest substantially in developing a model risk management function. The scarcity of talent in the area requires bank to strive for increased efficiency in model risk management.

As the number of models and their complexity increases the MRM function is evolving. An effective, mature MRM program can contribute to the bank's bottom line by avoiding losses, reducing costs, and improved efficiency in capital planning.

In June 2016, the Financial Accounting Standards Board (FASB) issued a new accounting standard to replace the "incurred loss" impairment methodology with the Current Expected Credit Loss (CECL) model, introducing a substantial change in the way credit losses on many financial assets – particularly loans – are recorded. On July 17, 2019 the FASB decided tentatively to change the CECL effective date for all non-SEC filing companies and for SEC filers that are considered Small Reporting Companies (SRCs). The CECL standard will become effective beginning January 1, 2020 for public business entities required to file with the SEC and on January 1, 2023 for all other public and nonpublic business organizations. Early adoption of the new standard is permitted for all companies in 2019.

The transition to the new accounting standard for estimating credit losses will require financial institutions to revise or develop new models to calculate their allowance for loan and lease losses (ALLL) and off balance-sheet credit exposures, and to develop a robust model validation framework to thoroughly review the models and meet supervisory expectations for model risk management (MRM).

2. Effective model development under CECL

Modeling is a central component in CECL's requirement to forecast and report expected losses on financial assets carried at amortized cost. This is also one of the most challenging aspects of the implementation and operation of a CECL program. Effective credit loss model development under a CECL program must integrate predictive modeling, analytics, advanced data management, and accounting principles.

2.1 Data management

The transition to the CECL model will bring with it significantly greater data requirements. Quantitative data are the foundation for the creation of reliable models that inform strategic business decisions. Data accuracy is especially important when calculating expected credit losses. Forward-looking forecasting for CECL creates a different demand on the data quality and data granularity than what is needed under current qualitative and quantitative allowance estimation methods because the accuracy of any forecasting model depends on the inputs for that model.

Typically, CCAR and DFAST data management practices are insufficient for CECL implementation. However, CECL data must be auditable and therefore must meet higher quality requirements compared to CCAR and DFAST data. Furthermore, CECL data must meet certain definitions, such as that the outstanding asset balances are defined as amortized costs. As a result, the data dictionary for CECL data is likely to be different from those for CCAR and DFAST data.

2.2 Modeling approach

The transition to the CECL model will require changes to methodologies to accurately account for expected losses under the new requirements. Forward-looking loss estimation requires reliance on complex forecasting models, typically by combining estimates of three models: (1) Probability of default (PD), (2) Loss given default (LGD), and (3) Exposure at default (EAD). Based on these three models, Expected Loss (EL) = PD x LGD x EAD.

Estimating each of these models poses unique challenges, ranging from specific data requirements to the use of advanced predictive methodologies. Thus, the transition to the CECL model and generating reliable forecasting of credit losses will require financial institutions to enhance their pool of data analysis talent.

2.3 Segmentation

One of the key steps in the transition to the CECL model is to re-examine how the loan portfolio is segmented. The purpose of loan portfolio segmentation is to break the portfolio into meaningful segments so that their allowance for loan and lease loss (ALLL) can be estimated accurately.

Upon re-examination of their loan portfolio segmentation, financial institutions may find that their current practice is optimal, or close to optimal, for CECL purposes. Still, whether they choose to continue with their current practice or shift to a new set of segments, financial institution will have to justify and document their choice.

Traditionally, financial institutions tend to segment their loan portfolio based on the purpose of the loan (e.g., commercial, mortgages, automobile, etc.) However, over time it is common for financial institutions to tinker with these segments as a result of input and guidance from regulators or simply in response to unusual circumstances. There is often a capture-all segment that includes all types of miscellaneous loans.

If the goal of segmentation is to generate accurate credit loss estimates, then segmentation should be based on risk characteristics. The resulting segments should each have similar risk characteristics and their boundaries should be defined by a trade-off between accuracy (granularity) and usefulness (in terms of segment size and the number of segments). Advanced statistical methods can be used for loan segmentation which can yield statistically distinct segments that are still practical to work with.

3. Model risk management under CECL

The new CECL standard requires financial institutions to change their loss reserve models, and in some cases to develop new models entirely. Similarly, the validation of the new models will entail important changes as well.

Most organizations will validate their new models prior to their parallel run periods. Institutions that are subject to Supervisory Guidance on Model Risk Management (SR 11-7/OCC 2011-12) are required to validate all models, but many other institutions are likely to

follow this guidance as a leading industry practice. Because CECL models are different from previously developed models, the validation must be adjusted for these models.

3.1 CECL requirements are less prescriptive

The CECL requirements are not very prescriptive. Individual financial institutions are encouraged to make their own modeling choices according to their size, resources and risk profile. Therefore, a variety of validation approaches may be developed, shifting from the highly prescriptive SR 11-7/OCC 2011-12 under which model governance must include model development, model implementation and model usage.

Without specific requirements, each financial institution will have to make a number of choices when developing its CECL framework, processes and models, and each choice will have to be supported with reasonable and sufficient evidence.

3 .2 Validating segmentation

Loan portfolio segmentation should support CECL financial disclosure requirements and takes into account data availability, product features, risk factor feasibility and risk differentiation. All these elements must be validated as a first step in the validation of the CECL framework because, often, segmentation plays an important role in other models. In some cases, when segments are characterized by completely different risk factors, separate models are developed for each segment.

To determine whether segmentation is reasonable, a validator should consider evaluating the methodology based on its use, which often requires considering different perspectives. For example, from the perspective of the business, a validator should understand the portfolio features, the types of products and the potential risk factors of the portfolio. With this information, the validator can challenge the decision to use segment-level or loan-level models. In general, segment-level models are more applicable to portfolios with highly concentrated customer types, products and collateral profiles while loan-level models are often used for more diversified portfolios.

4. Concluding remarks

The new CECL standard requires financial institutions to change their loss reserve models, and in some cases to develop new models. Similarly, the validation of CECL models will entail important changes as well.

Effective credit loss model development under a CECL program must integrate predictive modeling, analytics, advanced data management, and accounting principles. As a result, implementation of the new standard will require financial institutions to enhance their data management standards and adopt new modeling approaches.

The CECL requirements are not very prescriptive and individual financial institutions are encouraged to make their own modeling choices according to their size, resources and risk profile. Financial institutions may therefore adopt a variety of validation approaches, shifting away from the highly prescriptive SR 11-7/OCC 2011-12 model risk management guidelines.

A key component of CECL implementation is a re-examination of loan portfolio segmentation. The purpose of loan portfolio segmentation is to break the portfolio into meaningful segments so that their expected losses, and therefore, their ALLL can be estimated accurately. For CECL purposes, financial institutions will have to justify and document their segmentation methodology.

About ECON | analysis, LLC

ECON | Analysis, LLC is a provider of risk management consulting services, dedicated to helping financial institutions identify, quantify and mitigate model risk. ECON | Analysis, LLC combines academic, technical, and business expertise to provide highly-customized solutions to the model risk management problems our clients face. We deliver unmatched value to our clients by relying on research-based analyses and by offering full transparency about our work.

Visit us online at www.econ-analysis.com for more information.

ECON | Analysis, LLC

80 Hillside Terrace
Belmont, MA 02478
info@econ-analysis.com