Risk Characteristics, Risk Factors, and Market Data Under CECL

A Discussion Paper of the

AMERICAN BANKERS ASSOCIATION

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Summary of Observations and Key Discussion Points

1. A key aspect in implementing the CECL accounting standard is the identification of risk characteristics of loans and debt securities. Not only is there the requirement to measure credit losses on a pool basis when similar risk characteristic(s) exist, banks will apply adjustments to starting point estimates based on a supplemental review of the characteristics (generally listed in ASC 326-20-55-5) and of other credit risk factors (generally listed in ASC 326-20-55-4). Banks will often refer to their analyses of risk characteristics and risk factors interchangeably and use these analyses in both measuring the expected credit loss, but also to disclose changes in the factors that influenced management's credit loss estimate, as required under CECL.

2. Many banks, both large and small, will consider obtaining and using externally acquired historical credit loss experience (also referred to as "market data" or "peer data") in their analyses of credit risk characteristics and credit risk factors. Credit loss rates indicated from peer data can be used as yard-posts in assessing the reasonableness of estimates based on internal data and may also be used as a primary basis for starting point estimates or adjustments to those estimates.

3. The accessibility of loan level credit performance data supplied by Fannie Mae and Freddie Mac will enable banks that maintain portfolios of residential mortgages to better understand the credit risks in their respective portfolios. In addition to data, tools and instructions are provided by these organizations to perform meaningful and detailed analyses.

4. Historical experience related to the specific risk characteristics on Fannie Mae and Freddie Mac residential mortgages indicates significant differences in life of loan credit loss rates, based on various individual risk characteristics, such as vintage, loan terms, loan purpose, and initial credit quality. This will likely influence pooling decisions and risk factor analysis to be performed, based on these (and other) risk characteristics.

5. Banks may also find such credit loss rates (or detailed loan performance metrics that underlie the rates, such as likelihood of default or loss severity) to be useful when analyzing aspects of their loan portfolios that do not totally conform to the terms of the loans in the database.

6. ABA believes that, due to the accessibility of this market data, bank examiners, auditors, and investors will independently obtain and use such data to better understand and evaluate credit risks in the related portfolios – regardless of the level of detail maintained by the bank. Bankers should, thus, be prepared to address questions coming from such constituencies. Many bankers currently desire to perform CECL estimates based on pools resembling current call report captions. However, if they do, significant supplemental analysis will be required to assess the impact of the various risk characteristics.

7. Market and peer data related to other lending products is widely available from different firms and the accessibility of such data will likely expand as CECL practice widens.

8. As a result, ABA believes that bankers should consider configuring their CECL estimation systems to capture and analyze data points underlying the key loan characteristics that are maintained by third party providers for all lending products they maintain. These data points go beyond current call report captions and the internal data that would support analyses of such characteristics would generally require linking data residing in the loan origination system to data in the loan servicing system. Such linkage does not currently exist at many banks.

9. Configuring systems to capture and analyze such data could require significant effort at many banks. This could necessitate a variety of incremental internal controls to be implemented and maintained. Further, risk management processes will be required to control the risks over third party systems and data if so selected.

Changes from the Previous Version: Slight wording and formatting changes were made to the November 2017 version of this paper, which was available only to ABA CECL Network members and certain others. Further, point number 1 above was expanded for this February 18 version to include the consideration of CECL disclosure requirements within the review of risk factors. This is shortly discussed on page 6.

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Analysis of Risk Characteristics and Risk Factors under CECL

Paragraph 326-20-30-2 of the CECL standard[1] notes that banks shall measure credit losses of financial assets on a collective (pool) basis when similar risk characteristic(s) exist. A list of risk characteristics is provided in 326-20-55-5 and includes:

a.   Internal or external (third-party) credit score or credit ratings
b.   Risk ratings or classification
c.   Financial asset type
d.   Collateral type
e.   Size
f.   Effective interest rate
g.   Term
h.   Geographical location
i.   Industry of the borrower
j.   Vintage
k.   Historical or expected credit loss patterns
l.   Reasonable and supportable forecast periods.

The guidance notes that the list is not intended to be all-inclusive. Indeed, Example 2 of the illustrations (326-20-55-23 through 326-20-55-27) not only notes how a loan to a commercial borrower would qualify as a risk characteristic (as opposed to a consumer borrower), it also illustrates that specific borrower performance qualifies as a risk characteristic that is sufficient for individual measurement of expected loss.

Neither of these specific issues represents significant changes from those addressed in current practice.[2] However, their mere mention in the standard indicates that risk characteristics can span many different traits that are not included in the list.

Closely connected to risk characteristics are risk factors that are discussed in paragraph 326-20-55-4. These factors are considered in order to adjust historical loss information to reflect current conditions and reasonable and supportable forecasts. These factors are:

a)   The borrower's financial condition, credit rating, credit score, asset quality, or business prospects
b)   The borrower's ability to make scheduled interest or principal payments

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[1] Accounting Standards Update (ASU) 2016-13, issued by the Financial Accounting Standards Board (FASB), will be effective in 2020 for SEC filers and 2021 for all other institutions. "CECL" is an acronym for the "Current Expected Credit Loss" accounting model that is required in ASU 2016-13.

[2] Where significant differences in risk characteristics exist to warrant an individual evaluation of impairment in today's accounting model, ASC 310-35 generally requires that impairment that is measured on an individual basis to be measured based on the present value of expected cash flows. CECL does not require a present value calculation to be performed.

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c) The remaining payment terms of the financial asset(s)
d) The remaining time to maturity and the timing and extent of prepayments on the financial asset(s)
e) The nature and volume of the entity's financial asset(s)
f) The volume and severity of past due financial asset(s) and the volume and severity of adversely classified or rated financial asset(s)
g) The value of underlying collateral on financial assets in which the collateral-dependent practical expedient has not been utilized
h) The entity's lending policies and procedures, including changes in lending strategies, underwriting standards, collection, writeoff, and recovery practices, as well as knowledge of the borrower's operations or the borrower's standing in the community
i) The quality of the entity's credit review system
j) The experience, ability, and depth of the entity's management, lending staff, and other relevant staff
k) The environmental factors of a borrower and the areas in which the entity's credit is concentrated, such as:
   1. Regulatory, legal, or technological environment to which the entity has exposure
   2. Changes and expected changes in the general market condition of either the geographical area or the industry to which the entity has exposure
   3. Changes and expected changes in international, national, regional, and local economic and business conditions and developments in which the entity operates, including the condition and expected condition of various market segments.

The "Factors to Consider in the Estimation of Credit Losses" listed in the 2006 *Interagency Policy Statement on the Allowance for Loan and Lease Losses* (2006 IPS) are included in this list and, thus, the factors in this list are likely to be referred to as the "Qualitative Factors" or "Q Factors" as they are today.[3] Note, however, that several of the risk factors in 326-20-55-4 are very similar to the risk characteristics in 326-20-55-5.

- Risk factors "a" and "b" in 326-20-55-4 and risk characteristics "a" and "b" in 326-20-55-5 address borrower credit quality.
- Risk factor "g" and risk characteristic "d" address collateral and collateral values.
- Risk factor "k" (referring to regulatory and legal environment and geographical area) appears to be closely related to risk characteristics "h" and "i".

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[3] While the factors in the 2006 IPS have relevance under CECL, their relevance must be interpreted differently. For example, the 2006 IPS states that "…changes in the level of the ALLL should be directionally consistent with changes in the factors, taken as a whole…" Under CECL, Q Factors such as the volume and severity of past due and adversely classified loans may be increasing while the ALLL decreases. This is due to the ALLL is recorded upon origination – increases in the volume and severity of those loans may be less than originally expected. In these cases, it is likely the ALLL will decrease (other things being equal). Further, Q factors will need to be evaluated under CECL not only as to how the factor affects current impairment, but also expected future impairment.

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Further, there are circumstances in which one of the risk factors noted in 326-20-55-4 can be a basis for segmentation. For example, past due and nonaccrual status can be the basis for segmenting a pool, as is often done in a migration or roll rate analysis. Collateral values (evidenced by loan to value ratios) may also be a basis for banks to pool their portfolios.

There is little disagreement that a bank is not required to segment pools in a detailed fashion for the purposes of measuring expected credit losses. However, as noted in paragraph 326-20-30-8, analyses of risk characteristics must be performed that take into account differences in the portfolio mix that is reflected in the historical experience used to develop credit loss rates and those reflected at the reporting date. Further, paragraph 326-20-50-11d notes that a "discussion of the changes in the factors that influenced management's current estimate of expected credit losses and the reason for those changes" must be disclosed. "Portfolio composition" and "underwriting practices" are specifically given as examples.

Considering the observations just noted, the analyses performed of risk characteristics and risk factors will often be interchangeable. Therefore, in practice, a banker that calculates starting point credit loss estimates based on pools maintained on a high-level aggregated basis will then be expected to identify and measure the impact of individual risk characteristics of the actual portfolio mix at the reporting date. Bankers will need to assess the trade-off of maintaining higher-level pools that require more supplemental analyses to measure the adjustments to starting point estimates versus maintaining detailed pools that require less supplemental analyses to measure the adjustments.

Use of Market Data to Assess Risk Characteristics and Risk Factors

Many banks, both large and small, will consider obtaining and applying externally acquired historical credit loss experience (also referred to as "market data") in their analyses. Reasons include:

- Banks entering markets or offering new products will likely have little to no historical experience to otherwise rely upon.
- As is often performed today, banks may use market data obtained to monitor peers. Charge-off and ALLL coverage rates of peers are often used as "yard-posts" in assessing the reasonableness of the bank's own estimates.
- Many banks will often lack critical mass required to attain "statistical reliability" of their estimates. For the purposes of this paper, "statistical reliability" is not meant to imply that mathematical or statistical thresholds must be achieved. The banker is merely looking to be comfortable in explaining the reasonableness of her/his assumptions. Using market data will help manage volatility in expected loss estimates. For example, it is unlikely that a bank that has experienced zero losses on its fifteen commercial real estate loans would use those fifteen

loans as the basis for its credit loss estimate. The volatility inherent in an estimate based on a low number of loans may often be intolerable from a capital management perspective.[4]

The level of granularity related to risk characteristics and risk factors that can accompany a CECL analysis will also likely compel banks to further consider acquiring third-party market data merely because the data has not been previously retained for credit loss analysis purposes. Holes in the historical experience, due to the data not being retained or data inaccurately input, may cause certain banks to use market data in the short term until sufficient amounts of accurate data is collected.

Data Available for Residential Home Mortgages and Use of the Data

Starting in 2013, in support of their credit risk sharing programs, the government sponsored enterprises (GSEs) Fannie Mae and Freddie Mac started releasing loan level credit performance data on the majority of residential mortgage loans the organizations had acquired since 1999 (Freddie Mac)[5] and 2000 (Fannie Mae)[6]. This data are publicly available without charge on their websites and are updated quarterly.

The amount of data and the number of data points available to be analyzed are robust[7] and likely enable statistical estimates of reasonable reliability and precision. Additionally, webinar recordings and material on the website include tutorials on how to extract and design relatively sophisticated credit performance reports using open source (free of charge) software applications. As data points such as zip code of the collateral are included, the data can be applied to a bank's footprint relatively easily. The webinar even informs the viewer how to update loan to value ratios, based on available zip code-based home priced indices.

While all loan products are not included in this data (yet)[8] and there are reporting lags for both data on new loans and ongoing loan performance, the data appear to allow relatively detailed analysis of loan features that may qualify as relevant risk characteristics when assessing the relevant level of aggregation for pooling purposes. For example:

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[4] It should be noted that even when market data is used, capital volatility is expected, due to the bank's own small size. While market loss rates might result from a large number of observations, the smaller the bank, the larger the variance expected from the market rates.

[5] See http://www.freddiemac.com/research/datasets/sf_loanlevel_dataset.html

[6] See http://www.fanniemae.com/portal/funding-the-market/data/loan-performance-data.html

[7] As of September 2017, Fannie Mae and Freddie Mac data sets have data on over 35 million and 23 million loans, respectfully.

[8] For example, non-fully amortizing loans (such as interest-only loans) and adjustable rate loans are not included. Full listings of products not included in their data sets are provided on their individual websites.

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- Loan purpose: Loans for cash-out refinancing purposes normally have significantly higher loss rates than loans used for purchase or standard rate/term refinancing purposes.
- Occupancy: Loans to borrowers that acquire properties for investment purposes, rather than for primary or second homes, normally experience significantly higher loss rates.
- FICO scores: Loans to borrowers with scores lower than a certain level (for example, 700) normally have loss rates significantly higher than for those with higher FICO scores.
- Vintages in specific stages of an economic cycle (for example, the financial crisis) perform significantly worse than vintages in other stages.

As a rule, bankers should pause before applying credit risk score averages within the portfolio, such as FICO scores or LTVs, in an attempt to simplify their estimates. Credit risk is nonlinear, so double the risk metric does not mean double the risk. For example:

- A pool of loans with a third of the borrowers possessing FICO scores of 800, a third with 700, and a third with 600 may have a weighted average FICO of 700. In 2003, FICO scores of 700 approximated a 0.60% expected default rate. However, borrowers with FICO scores of 800 have an expected default rate of 0.2%, and those with scores of 600 have rates of 2.3%. Therefore, the actual expected default rate of the portfolio is over 1.03%, over 40% higher than the rates an "average FICO rate". Default rates on publicly-rated bonds have the same characteristic. As the instrument creeps down the credit rating scale, the default risk can jump logarithmically.

- Losses upon default for collateralized loans naturally are very small until the loan to value ratio approaches 100. This is easy to picture – banks can foreclose on a loan that has an LTV of 90 and sustain no loss. Once that 100% LTV threshold is reached, however, credit losses are experienced. Assumptions of future collateral prices, therefore, can often have a "cliff effect." When collateral prices in a geographic area decline so that LTVs near 100%, portfolio losses are likely to jump dramatically. An estimate based on average LTVs could significantly misstate (both over and under) the risk in the portfolio.

Of course, materiality will be a critical aspect when assessing risk characteristics in CECL. Many banks may have narrowly configured underwriting standards that significantly limit the various risk characteristics in their portfolios. Because of the significant differences in expected losses between the various risk characteristics, however, it would appear necessary that these characteristics will need to be analyzed in some manner by any bank. After all, the risk characteristics discussed above are relatively well known during the underwriting process and intuitively consistent with assumptions of residential mortgage loan risk. These risk characteristics would likely be baseline concerns for most bank boards, examiners, auditors, and investors of banks that have significant mortgage loan portfolios.

Anticipated Application

It is clear from discussions with auditors and regulators that, while a bank need not disaggregate its pools at levels beyond those listed in the Call Reports, it is commonly expected that "Q Factor" analyses will be performed that addresses changes in portfolio mix. Changes in the risk characteristics of a portfolio require assessment of whether historical credit loss rates (those used in a starting point estimate) need adjustment to more appropriately reflect a loss expectation that is based on current conditions and forecasts of the future. A bank can either disaggregate its portfolio into separate, detailed pools that specifically address the significant risk characteristics or decrease the level of disaggregation and then analyze the separate risk characteristics in alternative manner to adjust the starting point estimate. In practice, a simple approach in using such market data could include disaggregating its portfolio by one of the bulleted characteristics above for the purposes of arriving at a starting point estimate and then performing supplemental analysis (and making adjustments to the starting point estimate) for the other bulleted characteristics.[9]

During the typical closing process, a bank may compare its own experience to the market data over time.[10] If the bank's experience is favorable to the experience indicated in the market data, it is reasonable for a bank to assume that its expected losses will likewise be favorable (and vice versa). Alternatively, a bank may elect to merely apply the market loss rates. Such use of market data should normally be considered reasonable when the bank can show the relevance of the market data to its portfolio (the risk characteristics of the bank's portfolio is consistent with the market data used).

Acknowledging that less complex institutions are not expected to perform complex analysis, it should be noted that Fannie Mae's Tutorial 102 training includes an illustration of "A good way to measure risk without a complex model." By applying "risk layers" to enable simultaneous credit risk analysis of four different risk characteristics (loans that are used for cash-out refinancing, are related to investment properties, include debt to income ratios are greater than forty-five, and/or there is a single borrower), such analyses have the potential to greatly reduce the time it takes to perform the supplemental analysis over the various credit risk characteristics. In other words, modern tools of technology appear to provide the potential to enable credit risk analysis that is considered complex in today's expectations that can also be performed very quickly.

A challenge a bank will face when comparing its own experience to those indicated in the market data is determining when to revise its previous loss expectations. For example, while experience

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[9] Bankers should understand that this process is merely one of several steps in applying risk factor adjustments to the starting point estimate. Further adjustments to update historical experience to current conditions and forecasts of the future are also required.

[10] This assumes that such market data apply to a similar geographic area and are related to other risk characteristics that are otherwise similar.

of the bank's pool on a specific vintage over the past two quarters has been unfavorable compared to the market, the bank may, nevertheless, believe that over the pool's remaining life, the performance will improve and eventually conform to the market rates. This struggle is not specific to the use of market data, as governance over credit loss assumptions (and changes to those assumptions) will be critical processes in any CECL estimate. As this issue relates to the reliance on market data, a bank will likely decrease its reliance on market rates as the loans progress through their loss curves. In other words, when times of critical risk have passed, reliance on market data will diminish. Practically speaking:

- Upon origination, a bank may merely apply the market rates of life of loan loss.
- Throughout the next few years of the life of a specific vintage, life of loan loss rates used may primarily reflect those of the market data, with a portion of rate based on the actual specific bank vintage performance.
- Throughout the next few years of the vintage life after that point, life of loan loss rates used may primarily reflect those of the bank portfolio, with a portion of rate based on the market data.
- After the point in the loss curve in which losses have subsided, a bank will completely rely upon its own specific portfolio performance.[11]

Application to Non-Conforming Mortgage Portfolios

While many residential mortgage loan products held by banks may not be "conforming," the GSE data may, nevertheless, have high relevance. For those residential mortgage products that are not included in the GSE market data (for example, jumbo loan products), it is possible that many of the same credit risk characteristics and loss patterns exist. A bank may compare the loss rates (or the relative pattern of loss rate activity) of its specific products to those included in the GSE data and assess the relevance of the data. Loss rates, or elements that contribute to them, may be found to have high relevance for a credit loss estimate of the bank's individual portfolio. For example, while borrowers with interest-only loans (a product in which data is not currently supplied by the GSEs) may not necessarily have similar default statistics as the amortizing loans in the market database, those loans may exhibit similar loss severity. In this case, market-based loss given default assumptions may be considered. Conversely, for all products, in areas of relatively sparse economic activity, it may be useful to apply nationally-based default statistics to loss given default assumptions based on internal data.

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[11] Of course, significant judgment will be needed to determine the specific "rates" used. Evaluating the relevance of the specific data underlying the rates, in view of the forecast of the future, will be a critical aspect of any CECL estimation process.

Implications of the Availability of Market Data

Due to the availability of loan level data supplied by the GSEs, banks that maintain portfolios of residential mortgages will have access to data that can help them better understand the credit risks in their portfolios, based on many specific characteristics of the individual loans. These analyses can include not only details of ultimate credit losses experienced but also past due status over time and can help bankers is assessing credit loss expectations on an ongoing basis. More immediately, however, it can help them evaluate how to best segment their portfolios into pools that best match the credit risks in their portfolios. Based on the willingness of the GSEs to instruct their constituents on how to access and analyze this information, ABA believes that, over time, such analyses will become commonplace.

As CECL practice evolves, ABA believes that bank examiners, auditors, and investors will also independently use this data to better understand and assess credit risks in the portfolios. As a result, ABA recommends that bankers consider configuring their CECL estimation systems to capture and analyze data underlying key loan characteristics that go beyond current call report captions. While the examples of the additional detail discussed above include occupancy (primary, second home, investor), loan purpose (purchase, refinance, cash-out refinance, etc.), FICO scores, and loan to value ratios, evolution of practice may emphasize other data points. This does not mean that bankers must form separate pools by each of these credit risk characteristics for the purposes of CECL credit loss estimation. Risk factor analysis (commonly referred to as "Q Factor Analysis") can be performed, with adjustments applied to the starting point high-level pool estimates. In order to quantify such adjustments, the bank will need to, nevertheless, track and maintain such information in its portfolios. Doing so, however, would generally require significant changes to bank ALLL systems. For example, data from underwriting systems (such as FICO scores or loan purpose) would need to be linked to data from loan servicing systems (such as default and charge-offs). Such linkage is not maintained in readily available or readily analyzable formats at most banks today. Therefore, efforts to collect and link the internal data needed to analyze relevant historical experience within a bank will not be insignificant at many banks.

Accessibility of Performance Data on Other Loan Products

While the GSEs appear to provide the most accessible market data (free for most users), the availability of market data is not necessarily limited to conforming single-family residential mortgages. Loan-level credit performance data can be acquired today from other external parties for various loan products and the availability of such data across all product lines is expected to increase as CECL practice continues and data is gathered across the industry. Third party servicers are able to aggregate data of their clients, and consortiums have also been formed over the past several years. Usage of peer data is likely to expand and the cost of such data should decrease as new consortiums[12] are formed. Therefore, it appears prudent to consider these

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[12] The vast majority of (or the entire) "cost" charged by most consortiums for the market rates delivered to the individual bank is the data supplied by the bank to participate in the consortium.

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factors in determining specific data points to collect and maintain during the CECL implementation process. Examples of such data points can be extensive, but a simple list could include:

Commercial Real Estate:

- Property Type (Retail vs. Lodging, etc.)
- Geographic region
- Loan to Value
- Lien
- Time to Maturity
- Net Operating Income/Debt Service Coverage Ratio

Commercial and Industrial Loans

- Industry
- Collateral levels
- Net Operating Income/Debt Service Coverage Ratio

Vendor Management Requirements

The expected rising demand for market data will likely bring an accompanying increase in data aggregators and consortiums. Banks that use market data for significant aspects of their estimate processes will need to consider the relevant internal controls over data supplied by third parties, including third-party risk management processes. As data quality is key to an internal CECL process, the same can be said of the quality of data obtained from a third party. Bankers will need to refer to the various regulatory third party risk management guidance as they assess the need for market data.