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Predicting Earnings: CECL's Implications for Allowance Forecasts

BY JOY HART AND ANNA LABOWICZ

The new CECL and IFRS 9 accounting standards will require financial institutions to adjust loss allowances based on forward-looking expectations and calculate lifetime losses. In this article, we demonstrate the effect of the new allowance framework by quantifying allowances and credit earnings volatility for a sample portfolio. Our case study finds that along with a shift in the level of allowance, portfolio dynamics and concentrations play an increasingly important role in understanding and communicating expected performance and earnings.

A financial institution's allowance for loan and lease losses (ALLL) is an important estimate with significant impacts on an organization's overall earnings and capital. While this reserve calculation has always had the potential to be quite complex, the new accounting procedures brought by the current expected credit loss model (CECL) and International Financial Reporting Standard 9 (IFRS 9) change the important elements of the process. With these new regimes, allowances must be updated on every reporting date to reflect more than current credit conditions; credit quality will need to be measured from a forward-looking perspective which, by definition, will vary through time. The resulting overall portfolio loss allowance, and thus earnings, can exhibit substantial volatility.

The industry has already had a taste of the potential impacts of using expected cash flows for allowances with acquisitions of distressed loans and purchase loan accounting. This fair value accounting on acquired loans exhibited incredible volatility when compared to other assets. In CECL and IFRS 9, this forward-looking approach applies to the entire institution, and the expected patterns will be much more sensitive to the economic cycles, portfolio composition, and calculation assumptions.

This shift in predictability of losses and earnings will demand significant time from senior management not only to explain differences period over period, but also to accurately and confidently communicate expected patterns given anticipated strategy choices and market conditions.

Determining Credit Earnings

There are two main decision types which drive the ability to accurately forecast allowances and overall earnings:

1. Framework and methodology choices – data granularity, a reasonable and supportable look-back period, scenario narrative, and a wide array of smaller elements
2. Business and strategy choices – loan structure, type, industry, and geographic distribution, as well as potential for clustered defaults and downgrades (concentration)

Clearly, there are methodology choices that impact overall results; however, it is also clear that the economic dynamics of the portfolio and its composition have an important effect on outcomes.

The predictability of losses is mostly driven by the economic relationships in the portfolio, which are best described by concentration effects (e.g., name, sector, product, and geography). Some of the dynamics are quite intuitive; for example, an institution heavily invested in California real estate would have losses closely related to statewide housing prices as well as important commercial sectors in California. However, more diversified institutions will find a systematic approach helpful in fully understanding, anticipating, and communicating outcomes over time.

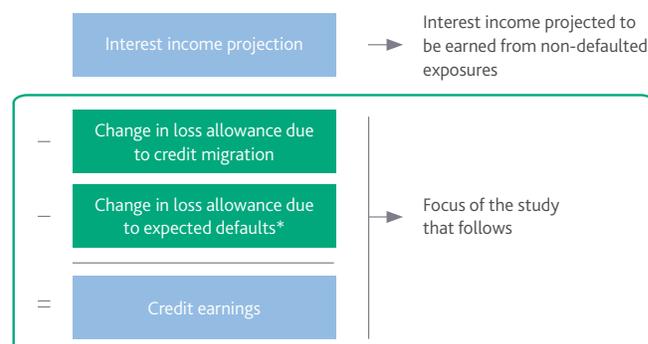
We find that a systematic approach using a simulation to determine credit earnings volatility provides a useful measure to help senior management anticipate what parts of the portfolio, management actions, and scenarios most impact predictability. This measure encapsulates the credit risk in earnings for the entire institution, as well as the contribution by portfolio segment, sector geography, etc.

Armed with an understanding of the dynamics within the portfolio, management can take actions to reduce portfolio credit earnings volatility and better communicate the anticipated volatility, given a market outlook or set of strategic choices. Figure 1 provides the basic formula for calculating credit earnings.

Case Study: Lifetime Expected Credit Loss

In the following study, we isolate the impact of shifting from a simple one-year expected credit loss (ECL) to the lifetime ECL allowance framework required by CECL for a sample global corporate loan portfolio created by Moody's Analytics. While the true economics and performance of the portfolio remain the same, the study isolates the impact on the attractiveness of particular portfolio segments given a shift in calculation horizon. Figure 2 shows the top countries and industries represented in the sample portfolio.

Figure 1 Credit earnings generated by a portfolio from time t_0 to t_1



*The expected recovery amount is implicitly included in change in loss allowance due to expected defaults. In other words, we assume an imminent default does not incur 100% but rather $100\% \times LGD$ loss allowance.

Source: Moody's Analytics

Figure 2 Portfolio characteristics: Top five countries and industries represented

Country	Percentage	Industry	Percentage
US/Caribbean	36.48%	Entertainment and leisure	7.13%
Japan	13.54%	Food and beverage	4.57%
United Kingdom	11.71%	Machinery and equipment	4.39%
France	10.52%	Business products wholesale	3.98%
Germany	9.67%	Utilities and electric	3.78%

Source: Moody's Analytics

The portfolio was analyzed twice with the same starting default probabilities and an analysis horizon of one year. As a straightforward example of the potential dynamics of increasing the ECL to lifetime, allowances were calculated using one-year ECL in the first run, and lifetime ECL in the second run. Using a correlation-based model, we simulated the credit earnings at horizon to determine the expected credit earnings value and volatility over the next year. We also calculated a new measure known as the credit earnings sharpe ratio, which provides a way to quantify profitability with consideration given to the new allowance requirements. Our quantitative measure ranks

Figure 3 Analysis results at the portfolio level

Run	1	2
Expected credit losses for allowances	12 month	Lifetime
Total commitment	\$99,485,000,000	\$99,485,000,000
Loss allowance at analysis date	\$567,173,735	\$1,689,309,883
Expected loss allowance at horizon	\$546,748,873	\$1,226,551,122
Expected change in loss allowance	\$(20,424,862)	\$(462,758,761)
Credit earnings volatility	0.8024%	0.8854%

Source: Moody's Analytics

both segments and instruments by assessing their marginal contributions to credit earnings volatility or the credit earnings sharpe ratio.

Results from the two runs match intuitive expectations that the overall portfolio allowance level and volatility will increase when applying a lifetime loss metric. Further, we see intuitive patterns where particular loan characteristics are more or less attractive when considering longer loss horizons. For example, for the entire portfolio of approximately 6,000 instruments, the weighted average time to maturity was approximately 3.5 years. The 1,000 top-ranked instruments based on 12-month expected loss allowances have a longer average time to maturity, while the top-ranked instruments under lifetime allowances have a significantly shorter average time to maturity. This broad pattern supports the expectation that the new accounting standards will incentivize institutions to favor shorter-term instruments.

Forward-looking credit considerations impact allowances under the new standards, so we are not surprised to find that many of the highest contributors to volatility of credit earnings are exposures that have some of the highest default probabilities. However, when comparing the two runs, there were several areas in the portfolio where assets ranked poorly based on credit earnings volatility – despite the fact that they had smaller default probabilities in the 12-month analysis.

The analysis becomes much more insightful once we look more deeply into segment dynamics and individual instrument impacts. Portfolio diversification plays a much larger role when looking at

longer periods of time, which encourages institutions to consider the relative benefit of an instrument or segment and look more closely at overall portfolio composition.

The relative benefits of certain sectors clearly change based on the required allowance horizon. We see in this analysis that the top-ranked exposures when using 12-month ECL for allowances are different than the top-ranked exposures when considering lifetime allowances. In Figure 4, we see the patterns within the portfolio. It is important to remember that the economics of the portfolio are the same in both runs, so our simulation correctly reflects that many of the best performers under 12-month allowances are the same under lifetime allowances. At the same time, there are clear cases where sectors are ranked significantly differently.

In our study, it becomes clear that interactions of various segments within the overall portfolio can play an important role in outcomes. For example, we see that the Swiss machinery and equipment segment is very attractive when looking over a single-year period; however, when we consider the full life of the loan, that segment becomes significantly less attractive due to the expected volatility of allowances in this category. Conversely, all of the real estate categories broadly increase in relative attractiveness when we evaluate our portfolio with a lifetime perspective.

We find that there is value in quantifying the risk and profitability of not only the portfolio as a whole, but also the interaction of individual elements within. Segment-level insights provide a quantitative basis for understanding dynamics, as well as hard numbers for reference when communicating strategy, expectations, and policy shifts to internal and external stakeholders. In our example, the analysis indicates a clear justification for increased investments in real estate in a lifetime allowance environment and decreasing focus (or shorter durations) in some industrial categories.

It is also worth noting that the above analysis is based on a benign credit environment. The impact of using a forward-looking default probability will have a significant impact in the negative part of the credit cycle. There will be even greater costs and uncertainty for organizations holding risky instruments, as a simple change in default probabilities alone will cause significant volatility in earnings.

As CECL rolls out across financial institutions in the US, and IFRS 9 takes effect for much of the world, managers must adopt new

Figure 4 Top 20 projections for lifetime allowances by credit earnings sharpe ratio

Country	Industry	Rank – Lifetime	Credit Earnings Sharpe Ratio – Lifetime	Rank – 12-Month	Credit Earnings Sharpe Ratio – 12-Month
Japan	Real estate	1	420.65	4	391.29
US/Caribbean	Construction	2	387.19	2	1,755.33
Germany	Publishing	3	316.42	3	392.03
Australia	Real estate	4	292.68	6	297.94
France	Food and beverage	5	286.76	8	290.07
Switzerland	Machinery and equipment	6	286.50	1	1,757.27
Switzerland	Lumber and forestry	7	255.74	14	256.41
US/Caribbean	Paper	8	253.13	18	249.90
US/Caribbean	Electronic equipment	9	241.46	10	269.69
Japan	Food and beverage	10	232.69	5	298.59
United Kingdom	Mining	11	227.10	30	226.73
US/Caribbean	Investment management	12	221.76	35	217.77
US/Caribbean	Oil, gas, and coal exploration/ production	13	215.91	32	219.78
Japan	Retail/wholesale	14	215.67	33	219.54
Germany	Food and beverage	15	209.80	36	213.22
United Kingdom	Entertainment and leisure	16	206.74	39	206.37
Australia	Chemicals	17	206.51	40	206.15
US/Caribbean	Oil refining	18	203.63	42	201.73
US/Caribbean	Business products wholesale	19	202.36	38	209.74
US/Caribbean	Publishing	20	200.40	50	196.21

Source: Moody's Analytics

ways to manage risk, compare instruments, and communicate expected outcomes and dynamics. As we have shown in this simple study, these considerations must be worked into business as usual for institutions and should be addressed at origination and in strategy to ensure organizations are following strategic and lucrative business practices given a new set of dynamics introduced by CECL.

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