

A wild ride

IFRS 9 model outputs are proving to be more volatile than parallel calculations generated for Basel purposes, as risk modellers update the through-the-cycle approach with point-in-time estimates. By Steve Marlin

A large Asian bank got a nasty surprise earlier this year when it conducted a test run of the model it had built to comply with new international loan-loss accounting standards, known as IFRS 9.

The volatility of the model's expected credit loss (ECL) projections far exceeded historical norms, and differed markedly from the internal ratings-based (IRB) approach the bank uses to calculate its Basel III capital requirements for credit risk.

"The volatility of expected credit losses quarter-on-quarter was a lot higher than we expected," says the bank's head of credit risk modelling. "The key surprise was how much the numbers move up and down."

The test results confirm lenders' worst fears about the transition to the new accounting standards, which take effect on January 1, 2018. IFRS 9 requires banks to set aside reserves to cover ECLs over 12 months for performing assets, and over the lifetime of impaired loans.

Need to know

- Large banks have begun conducting parallel runs of their expected credit loss (ECL) models for IFRS 9.
- The early results are not encouraging. "The key surprise was how much the numbers move up and down," says the head of credit risk modelling at a large Asian bank.
- Banks have had to convert the through-the-cycle risk parameters generated by Basel risk models into point-in-time estimates for IFRS 9.
- IFRS 9 models do not incorporate worst-case scenarios, which reduces the margin for error.
- The reliance on forward-looking macroeconomic forecasts is also contributing to the volatility of ECL models.

Under the existing incurred loss accounting standard, IAS 39, banks only need to set aside reserves when a loan becomes impaired.

IFRS 9 loss estimates must be recalculated at quarterly intervals to reflect new information about credit and economic conditions that comes to light during each reporting period. If those numbers jump sharply from one quarter to another, lenders would need to dip into their capital buffers to bolster loss reserves. That in turn impacts capital planning and stress testing, and ultimately the profitability of lenders.

Peering over the cliff

IFRS 9 was widely expected to increase the volatility of loss provisioning due to the cliff effect when loans become impaired and move from 12-month to lifetime loss provisioning.

"We expect an increase in profit-and-loss volatility under IFRS 9, due to the way IFRS 9 treats significant increases and decreases in risk, and due to the inclusion of forward-looking information," says Mark Engel, senior vice-president for risk and capital analytics at Scotiabank in Toronto.

The impact will vary from bank to bank, depending on the type and tenor of loans and the composition of the portfolio. Some banks with very high-quality loan books may even see lower volatility in loss provisions.

"We expect that IFRS 9 volatility will be lower than IAS 39 volatility," says the head of risk methodologies at a large European bank, citing internal volatility studies. "The reason is that IAS 39 requires only a small part of the portfolio to be provisioned for, whereas under IFRS 9 the whole portfolio will be provisioned for. If these assets are mostly [healthy], then they will have less volatility."

Most lenders will see the opposite effect, however: 75% of banks that participated in an impact assessment conducted by the European Banking Authority in November 2016 said they

expected an increase in the volatility of loss provisions under IFRS 9.

"There is more potential volatility in the allowance basis than you had under the incurred loss model due to a number of contributing elements: stage transferring criteria, scenario choice, methodology choice and effective life of an instrument," says Anna Kravn, senior director at Moody's Analytics in New York.

Still, banks were surprised by the magnitude of the swings when they began conducting test runs of their ECL models at the start of the year.

The volatility in quarterly loss estimates is largely a function of the IFRS 9 model requirements. Most ECL models are essentially modified versions of existing regulatory capital models, which banks have been running and fine-tuning for decades. But there are some important differences. For instance, the Basel risk models are based on a 'through-the-cycle' approach that forecasts average losses over rolling 12-month periods, while IFRS 9 relies on 'point-in-time' estimates of future loan losses based on the prevailing credit conditions at each quarter-end.

Converted to the cause

The starting point for many IFRS 9 modelling efforts was to convert the rolling 12-month risk parameters – such as probability of default (PD) and loss given default (LGD) – generated by the Basel models into forward-looking quarter-end estimates. "First, the Basel process generates through-the-cycle parameters," says the head of risk modelling at a second large European bank. "Next, we adjust these parameters in order to account for the position in the economic cycle and for information about the future."

There are various ways to perform this conversion. "Banks tend to use transition matrices and vintage curves to come up with a term structure of PDs required for IFRS 9 projections," says Stanislav Shcheredin, senior manager in credit risk modelling at PwC in

London. “Availability of default data is the key.”

Scott Aguais, a London-based credit risk consultant and the former head of credit risk modelling at Barclays and Royal Bank of Scotland, developed one such approach, called the Z-Risk Engine, which applies economic scenarios to obtain point-in-time versions of through-the-cycle parameters. The result is a ‘dual-ratings’ system that generates parameters that can be used for both Basel III and IFRS 9.

“Most external and internal ratings are through-the-cycle, so are unable to capture the short-term movements in risk that are needed for the point-in-time measures needed for IFRS 9,” says Aguais. “You have capital drivers that tend toward being conservative and then you have these new accounting standards that are focused more on accuracy, not conservatism.”

Aguais says a number of banks have licensed the Z-Risk Engine for their ECL models.

Alexander Petrov, head of credit risk models at Nordea in Stockholm, describes another way to extract point-in-time PDs from hybrid point-in-time/through-the-cycle risk parameters in a 2016 paper published in the *Journal of Risk Model Validation*. His approach assigns rating grades to customers and measures their sensitivity to changing macroeconomic conditions.

“Credit models are not all point-in-time or through-the-cycle. They’re in between,” says Petrov. “For IFRS, you must separate point-in-time estimates from through-the-cycle estimates.”

Next, the point-in-time risk parameters extracted from Basel models must be adjusted to comply with the requirements of IFRS 9. This is because the regulatory capital models incorporate ‘downturn’ scenarios, while ECL estimates must be based on a ‘reasonable’ set of macroeconomic forecasts.

“The Basel models typically have an element of conservatism embedded into them, seen in the minimum regulatory specifications for Basel PDs and LGDs” says Sandeep Maheshwari, chief analytics officer for credit risk at DBS Bank in Singapore. “These parameters are also calibrated with through-the-cycle and, where applicable, downturn assumptions. For IFRS 9 purposes, banks are revisiting these elements.”

This means worst-case scenarios are not factored into ECL models, which makes them inherently more volatile when credit or economic conditions deteriorate sharply.

“We needed to remove the downturn margin of conservatism from the regulatory parameters. This is because under IFRS 9,

parameters need to be point-in-time and forward-looking,” says the head of credit risk modelling at a third large European bank. “We had a difference between our regulatory parameters and our IFRS parameters.”

The task is further complicated by the fact that Basel models are calibrated to measure PD over 12-month periods, whereas IFRS 9 requires a lifetime horizon for loans that have experienced a deterioration in credit quality.

“If the credit quality has become bad, then the IFRS expected losses could contain multiple probability of default estimates,” says the large Asian bank’s modeller. “This makes Basel and IFRS expected loss comparisons less feasible and intuitive.”

Probability theories

Banks use a so-called ‘migration matrix’ to map the likelihood of an impaired loan defaulting over its life. “Since IFRS 9 requires expected losses over the lifetime, you need to be aware of the fact that the quality of a loan could improve or deteriorate during its lifetime, and this dynamic is captured by the migration matrix,” says Peter Quell, head of portfolio analytics for market and credit risk at DZ Bank in Germany.

The quality of the migration matrix, and indeed the entire process of calculating lifetime ECLs for IFRS 9, is largely dependent on the forward-looking macroeconomic scenarios that underpin it. “The inclusion of macroeconomic forecasts should have significant impact on the impairments projected under IFRS 9,” says Jimmy Skoglund, risk product manager at analytics provider SAS in Stockholm.

The IFRS 9 requirements leave little room for error. If a bank makes incorrect assumptions about the timing and shape of the credit cycle, and assigns risk parameters accordingly, the impact on ECLs could be severe. “The longer you project into the future, the more uncertain the prognosis. It’s difficult to say what economic conditions will be in five years,” says Petrov.

From the peak of a cycle, when losses are at their lowest, to the bottom, when losses are highest, the risk parameters used in ECL and Basel models could be off by a factor of 10, according to Aguais. “When you have objectives like IFRS 9 and Cecl [FASB’s Current Expected Credit Loss standard], which require taking into account the cyclicality of the credit cycle, these mostly through-the-cycle models are potentially far away,” he says.

The final ECL numbers reported by banks are

probability-weighted to a range of possible macroeconomic outcomes. Most banks are using multiple forward-looking scenarios, which are typically drawn from those developed from regulatory stress-testing purposes. However, there are still questions about the number and types of scenarios required.

“Banks use normally three to five scenarios, but some choose Monte Carlo simulations,” says Shcheredin at PwC.

The largest banks have already completed the design and implementation of their ECL models and have been conducting parallel runs with their existing incurred loss models since the start of the year. Others are still putting the final touches to their models, and plan to conduct parallel runs in the third and fourth quarters, before IFRS 9 takes effect on January 1, 2018.

“We are at the end of our implementation. It’s a huge effort,” says Louise Lindgren, chief risk officer at Länsförsäkringar bank in Stockholm. “Most banks should be at the end of implementation by January 1.”

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The parallel runs will reveal the extent of the volatility in ECL projections. A high degree of variance will pose a problem for banks, which need to not only report changes in expected losses from quarter to quarter, but explain the reasons behind the changes. This is easier said than done. For instance, if losses have gone up by 20% over the past quarter, this increase could be driven by a number of factors – such as the composition of the portfolio, the bank’s view on the economy, or the credit cycle – alone or in combination.

“Disaggregating the component parts that contribute to the estimated IFRS ECL is not easy,” says Maheshwari at DBS Bank. “Banks will soon start to cross the bridge as they begin to analyse the numbers and separate the signal from the noise.” ■