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## Fundamentally uncertain

The Basel Committee on Banking Supervision is aiming to wrap up its overhaul of trading book capital rules this year. Banks are worried about that – the treatment of liquidity risk is too harsh, the standardised approach is too complex, and the capital impact still too high, critics argue. By Peter Madigan

### Need to know

- Banks will have a new trading book capital regime by the end of this year, according to the Basel Committee on Banking Supervision.
- Not everyone thinks the deadline will stick, and there are a lot of outstanding complaints.
- Hedging is a particular concern, with critics claiming it will be penalised by proposals on diversification as well as those on illiquidity.
- ING estimates the risk measure for one proxy hedge would jump 133% if diversification is limited.
- The liquidity proposals would force both sides of a hedged position to be capitalised using the holding period of its least-liquid component.
- Among other worries, banks say the revised standardised charge may be asking too much of smaller institutions.

The official line on long-awaited new trading book capital rules is that they will not be awaited for very much longer. Regulators will weigh up the findings of a new quantitative impact study (QIS), analyse comments on December's third consultative document, and then – hopefully – publish the final rules before the end of the year.

“The current plan is to keep to the December 2015 deadline, although we will be mindful of the cumulative effect of all Basel reforms,” says William Coen, secretary general of the Basel Committee on Banking Supervision.

The unofficial line is a little different. “I’ve been working with the Basel Committee for more than 20 years, and the one thing I can say with certainty is that there is never any certainty around when a policy may be finalised,” says one senior regulator. “The committee says we will have the final text by the end of 2015, but since it is already two years overdue, I wouldn’t place too much stock in these deadlines.”

It’s not hard to see where the scepticism comes from. The *Fundamental review of the trading book* (FRTB) is an attempt to replace the current battery of post-crisis capital add-ons with a single, coherent framework but, three years into the project, banks still argue it is moving too fast (*Risk* August 2014, [www.risk.net/2352071](http://www.risk.net/2352071)).

The most recent consultation, released in December, asks for comment on three areas the Basel Committee describes as the main outstanding issues: internal risk transfers between the trading and banking books; calibration of the standardised approach for

market risk; and the recognition of market illiquidity in internal models.

*Risk* spoke with 12 different market participants, including dealers, regulators and industry groups, to gauge opinions on the December paper. While in general banks welcome the latest proposals, they also have plenty of concerns. The illiquidity rules are criticised for overstating risk and for being too onerous, requiring banks to run up to 70 different risk calculations per trading desk. And while changes to make the revised standardised approach more risk-sensitive are welcomed, others say it may also be too complex for smaller banks to run.

The Basel Committee might see these as the last hurdles, but banks are still kicking up a fuss about other parts of the framework, such as the limits placed on the diversification benefits they can claim in their internal models. For some proxy hedges, critics at ING have calculated this could see a 133% jump in expected shortfall numbers – the FRTB’s mooted replacement for value-at-risk as the standard risk measure.

“The Basel Committee believes banks are overestimating the diversification in their portfolios and are giving themselves too much credit. The industry raised concerns about this element because it believes it is doing a good job capturing the diversification through stress calibration and liquidity adjustments,” says Eduardo Epperlein, global head of risk methodology at Nomura in London.

Of the three topics still up for discussion, the treatment of market liquidity is arguably the most controversial. Illiquidity was recognised in Basel 2.5 through the incremental risk charge

and comprehensive risk measure, which cover default or credit migration risk and correlation products respectively, but the aim now is to cover the whole trading book.

The second FRTB consultation, released in October 2013, set out the Basel Committee's vision in detail. Minor changes were made in the third consultation. As things now stand, 26 risk factors would be spread across five different liquidity buckets – also known as liquidity horizons – representing the time a bank needs to exit or hedge the risk in a stressed market environment at something close to current market levels. A bank's exposure would be calculated for the full duration of the horizon, and capital charged accordingly.

Large-cap equities, liquid currency pairs and a bank's domestic interest rates are the only risk factors subject to the shortest horizon – 10 days – with the rest falling into the 20-, 60-, 120- and 250-day buckets. The latter is home to structured credit spreads.

The Basel Committee also plans to use what it terms a “model-independent assessment tool”, designed to allow regulators to identify desks with particularly illiquid, complex products. This standardised formula consists of a numerator taking in the desk-level modelled risk figure, including liquidity horizons and other stress scenario add-ons, which it divides by a leverage ratio-style exposure measure for the desk. If the calculation is below a certain threshold, regulators would refuse modelling approval.

Banks pushed back hard during the second consultation period, claiming it would be expensive and time-consuming to model each liquidity horizon bucket, for example. Others claimed the different horizons would affect the ability to hedge. For example, a portfolio of small-cap equities can be proxy hedged with large-cap stock, but the former would be in the 20-day liquidity bucket while the hedge would be in the 10-day bucket.

“If a bank implemented a hedge where the underlying asset is under a 60-day horizon but the hedge held against it is given a 20-day



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Eduardo Epperlein, Nomura

horizon, it means after 20 days the hedge would disappear, creating an outright position and leading to a huge overstatement of the risk,” says Marc Van Balen, global head of trading risk management at ING in Amsterdam.

Dealers also argued the model-independent approach was not suitable for fixed-income trading desks in particular. A desk trading US Treasuries, for instance, might have a low expected shortfall figure, but as short and long Treasury positions cannot always be netted out perfectly as they are often different securities – albeit from the same issuer – it would have a large balance sheet exposure, making it tough to pass the threshold and get internal model approval.

The December 2014 revised proposal rejected most of the banks' requests, but did give some ground. First, it allows banks to model the 10-day liquidity horizon and scale upwards to the relevant bucket, which lowers the operational burden but delivers similar results, according to the consultation paper.

Second, for hedged positions in which the liquidity horizons don't match, banks can move the shorter horizon into the same bucket as its hedge, as long as the basis and correlation risks for both risk factors are capitalised on the longer timescale. Using the example above, this would put both large- and small-cap equities into the 20-day bucket.

Banks cautiously welcome the changes, but many have lingering concerns. ING's Van Balen says while the treatment of mismatching liquidity horizons for hedges is an improvement, it still overstates the exposure banks run. “The real risk you are running is not illiquidity of the risk factor as defined, but the basis risk irrespective of whether a hedge is in place or not. You always have the possibility of putting a liquid proxy hedge in place. This liquidity treatment overstates the risk in a very significant way in some cases, and in my opinion it should be redefined,” he says.

Others say the liquidity horizon discussions have got the industry thinking about whether an asset that takes 250 days to dispose of should be sitting in the trading book at all, and should instead be subject to banking book capital requirements.

Industry groups also complain the liquidity rules mean some desks could be required to make as many as 70 calculations to compute their expected shortfall. Nawaz Kanji, product manager for integrated market and credit risk with IBM in Toronto, offers the more precise estimate of 63.

“The incorporation of liquidity horizons into internal model calculations means banks could have to do as many as 63 expected shortfall calculations per trading desk. There are five liquidity horizons and five different asset classes to calculate – equities, forex, interest rates, commodities and credit – and then there is a sixth fully diversified calculation that takes the entire portfolio altogether. Multiply the buckets against the asset classes and you're at 30 expected shortfall calculations,” says Kanji.

“For each of those 30 there is a stress period calculation based on a historical period going back to at least 2005 and an expected shortfall calculation for the current 12-month period using the same risk factors used in the stress period. Then there is a further calculation to work out the expected shortfall in the current 12-month period using the full set of current risk factors. That is 90 calculations, but because not every asset class features in all five of the liquidity horizons, no calculations are required for them. That is how you arrive at 63 calculations for each trading desk,” he adds.

The Basel Committee's revisions to the standardised model for market risk largely get the thumbs-up. The committee had proposed in its October 2013 consultation to require banks to follow a cashflow-based standardised

**133%**

The expected shortfall increase ING calculates for one proxy hedged position if diversification benefits are restricted

approach to calculating regulatory capital, in which banks would break down financial instruments into their constituent cashflows and then discount each cashflow using the risk-free curve for each currency plus the credit spread of each instrument.

Critics said this was impractical, arguing that while banks use cashflows to price trades, this information is not stored or used as an input in existing risk management systems. They also said the approach would require separate discount curves for each instrument, requiring banks to create possibly thousands of curves in total. That would require significant investment in new data systems, they argued.

“During the last QIS, we had more difficulty calculating the standardised approach than the internal model approach. Although some of these issues have been corrected in the most recent consultation paper, the intention was to create a very simple rule-based framework that banks can use as a replacement for the current standard approach. For a simplified rule, it is still burdensome to calculate,” says ING’s Van Balen.

In the December 2014 paper, the Basel Committee instead proposes a sensitivity-based approach that allows banks to value assets in their trading book using “price and rate sensitivities that are more likely to be available in their systems as inputs into the different asset class treatments” – for example, the per-basis point sensitivity of a position to a move in interest rates, known as DV01. That should lower the cost of compliance for all banks, but especially those that have already developed internal models.

“The sensitivity-based approach uses well-known risk sensitivities such as DV01, delta and vega. These are the sensitivities banks use as inputs to their VAR models, as opposed to the cashflow approach, which would require banks to build whole new systems from scratch solely for this market risk calculation,” says Nomura’s Epperlein.

It’s not perfect though – banks worry that while the final version is more risk-sensitive, it will be too complex for smaller institutions. For example, it requires banks to account for non-linear risk factors, even if the bank has no material non-linear positions.

If these issues can be resolved, will the industry be happy? Not likely – banks insist there are still big problems with other parts of the framework, such as the recognition of diversification.



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The fear among regulators is that bank models are assuming too great a reduction in exposure, particularly during periods of stress, when some diversification benefits might vanish as investors flee to a handful of safe havens.

To capture this, the Basel Committee proposed in October 2013 that banks calculate a market risk capital charge using their internal models with full diversification effects, and then calculate the capital charge for each of the five asset classes – equities, credit, foreign exchange, interest rates and commodities – without diversification. The final internal model capital charge is then calculated as a weighted average of the two.

### Following feedback

This approach already reflects industry feedback – the FRTB originally proposed the use of fixed, regulator-set correlations – but some risk managers believe it is still too harsh, especially for emerging markets, where cross-asset proxy hedges are widespread ([www.risk.net/2304435](http://www.risk.net/2304435)).

“One element of the FRTB that is extremely punitive is the fact that diversification between different asset classes will be limited. By not allowing full diversification, there is a complete disincentive to hedge certain exposures. This will be even more extreme for emerging

markets, where it is more common to hedge exposures across asset classes,” says ING’s Van Balen.

The impact of the new diversification rules was highlighted by ING in an October 2014 presentation. It used the Euro Stoxx 50 equity index as the underlying exposure in its hypothetical portfolio and an iTraxx Europe index credit default swap contract as the hedge.

Under the five different liquidity horizons included in the FRTB, the Euro Stoxx 50 is categorised as a large-cap equity product and therefore has its expected shortfall calculated to a 10-day liquidation horizon. Since the iTraxx hedge held against it is categorised as a credit product, however, both positions are subject to the 60-day liquidity horizon.

ING claimed that by only recognising limited diversification between risk exposures and hedges, the expected shortfall calculation for the position jumps by 133% when compared with an approach that allows full diversification. The presentation warns “limiting the diversification effect takes away the incentive to hedge [and] risk management and capital management diverge”.

Nomura’s Epperlein accepts the Basel Committee has improved the methodology for calculating the diversification constraint, but as it’s not considered an outstanding issue in the December 2014 consultation paper, he says banks just have to wait and see how regulators decide to calibrate the formula.

“The second FRTB consultation paper improved the formula for calculating this constraint, making it a little more operationally workable,” he says.

Other concerns centre on the FRTB’s overall treatment of securitisations. Jouni Aaltonen, a director at the Association for Financial Markets in Europe, says the duplication of the default and spread risks and the combined capital charges can in some cases substantially exceed the maximum loss of the instrument.

“If you have a lack of granularity in your product bucket, for particular securitisations you have to put them into a residual bucket that attracts a maximum 5,000-basis point spread, and in that case the securitisation charge can exceed the maximum loss by multiples. We understand the Basel Committee is currently working on the treatment of securitisations and are looking forward to seeing the improved methodology,” says Aaltonen. **R**