The Basel Committee on Banking Supervision has proposed significant revisions to the market risk framework in its second consultative document 'Fundamental Review of the Trading Book: A Revised Market Risk Framework'. Although the implementation details are yet to be finalised, these revisions are likely to completely overhaul the current capital treatment of banks' trading activities.

In this insight paper, CRISIL GR&A analyses the impact of the revised framework on banks.
EXECUTIVE SUMMARY

The Basel Committee on Banking Supervision has proposed significant revisions to the market risk framework in its second consultative document ‘Fundamental Review of the Trading Book: A Revised Market Risk Framework’. The new framework includes the following:

- New policies to determine what can be included in the trading book. There is a lower-permeability boundary between the trading book and the banking book.
- Possibility of higher capital requirements for the trading book’s market risk, which for banks using models-based approaches will have to be reported with both standardised and internal models-based approaches.
- Higher model validation requirements, including daily Profit and Loss attribution, model backtesting and regular model validation reporting.
- Public disclosures should have information about market risk capital charges, including on regulatory capital charges calculated using both standardised and internal models-based approaches. These have to be reported at higher granularity with trading desk level reporting.

Key challenges for banks in implementing these requirements:

- **Stressed Scenario Calibration.** Under both standardised and internal models-based approaches, capital requirements will be calibrated to a period of significant financial stress. The use of stressed inputs will increase capital requirements significantly unless compensating measures are taken. The aim of stressed scenario calibration is to reduce cyclical of market risk capital charges. The key challenge is to model the products and simulate the P&L strip till the desired stress period.

- **Moving from Value-at-Risk to Expected Shortfall.** Banks will have to use advanced simulation and sampling techniques to measure the distribution of tail events, including many more simulation scenarios to get a meaningful sample of tail events. Expected Shortfall backtesting is more complicated than Value-at-Risk backtesting, as both the size and likelihood of losses have to be factored in Expected Shortfall.

- **Incorporating Liquidity Horizons.** Liquidity horizons will significantly affect banks trading in complex and structured products. Banks will have to set aside additional capital to reflect potential illiquidity of instruments.

- **Revised Standardised Approach.** The revised approach will make calculating standardised approach capital charges mandatory and increase desk-level scrutiny. Significantly, the approach will move some products to the standardised approach permanently.

- **Revised Internal Models-Based Approach.** Regulators will scrutinise models and model validation requirements at a more granular level. The new quantitative and reporting tools will be difficult to setup with the present IT infrastructure and processes of banks. The precise impact of the new framework will only be known once the Basel Committee conducts a quantitative impact study of the proposal. With its expertise in regulatory risk modelling, CRISIL GR&A has been working with banks in implementing market risk guidelines of regulators.

In the aftermath of the global financial crisis, regulators discovered that banks were undercapitalised given their trading book exposures. The Basel Committee on Banking Supervision (BCBS) has proposed significant revisions to strengthen the market risk framework for mitigating the cyclical of risk and bringing revised standards for capital requirements. Many regulators think that banks are inadequately capitalised given their trading book exposure. In this context, the BCBS recently issued a consultative document for public comment: ‘Fundamental Review of the Trading Book: A Revised Market Risk Framework’.

The major revisions in the capital framework under Basel 2.5 and Basel 3 are as follows:

- **Incremental Risk Charge (IRC):** to address credit risk migration and default risk
- **Stressed Value-at-Risk (SVaR):** to be added to current VaR
- **Consistent treatment of securitisation exposures across trading and banking books**
- **Introduction of the Comprehensive Risk Measure (CRM) for certain correlation trading activities**

Despite these changes, the BCBS has observed a few shortcomings of the market risk framework:

- There is no single view of how trading risk should be categorised or capitalised. The current capital requirements for the trading book are governed by a patchwork of regulatory steps in classification and requirements.
- The challenge of addressing overlapping capital charges such as the overlapping effect of VaR and SVaR remains.
- The trading book or banking book boundary considerations are not fully resolved.
- Market liquidity risk is not consistently or fully captured.
- Stressed VaR’s liquidity horizon is limited to 10 days, which is insufficient to capture risks from market illiquidity.
- Current approaches are based upon bank-specific views of risk.

A key objective of the consultative document is to promote greater consistency in risk-weighted asset (RWA) outcomes across banks and reduce the trade-off between the capital requirements of the banking book and trading book. The BCBS aims to achieve better balance among risk sensitivity, simplicity and comparability under the existing capital framework, including that for the banks’ trading books.

The BCBS has made various proposals to address the shortcomings of the existing capital framework. Some of them are as follows:

- **Reviewing the definitions of the trading book versus the banking book**
- **Changing the way risk models are calibrated**
- **Replacing VaR with Expected Shortfall as a new measures of risk**
- **Incorporating liquidity considerations into market risk**
- **Tightening rules related to diversification and hedging**
- **Reviewing standardised methods and their relation to internal models**
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PROPOSED CHANGES AND POTENTIAL CHALLENGES

Trading Book and Banking Book Boundary

The Basel Committee on Banking Supervision (BCBS) has proposed a clear demarcation between the trading and banking books to limit regulatory arbitrage. The demarcation should discourage banks from shifting their portfolio from one book to another to provide the most favourable capital outcome. The revised boundary set forth by the Basel Committee is based on the ‘evidence-based approach’ or ‘valuation-based approach’.

In the evidence-based approach, the boundary is defined not only by the bank’s intent, but also by the evidence of its ability to trade and manage the risk of instruments and positions on a trading desk. Further requirements are included in the areas of marking to market and recognising changes in fair value through the Profit & Loss (P&L) statement.

In addition, transferring positions between the trading book and the banking book would be possible under very strict and rare circumstances, as defined by the Basel Committee and subject to supervisory approval.

The aim of reviewing the definitions of the trading book is to make it much less likely that illiquid exposures could find their way into the trading book or that these exposures would be supported by insufficient capital, as was the case in the lead-up to the recent financial crisis.

The Basel Committee has also agreed to consider the development of a Pillar I charge for interest rate risk and credit spread risk in the banking book. In our view, the agreement partly represents a compromise towards those BCBS members who favour a valuation-based approach to the trading book/banking book boundary, instead of the evidence-based approach followed now. The valuation-based approach would have included valuation methodology of available-for-sale securities as a criterion to be fulfilled in ascertaining capital risk exposure.

Stressed Calibration

Capital requirements will be calibrated to a period of significant financial stress in both the internal models-based and standardised approaches. Stressed calibration reduces the cyclicalities of market risk capital charges and should ensure that regulatory capital is sufficient even in periods of significant market stress.

Moving from VaR to Expected Shortfall

The committee has decided to use an Expected Shortfall (ES) measure for the internal models-based approach given the limited ability of the VaR measure to capture the tail risk of the loss distribution. Stressed calibration reduces the cyclicalities of market risk capital charges and should ensure that regulatory capital is sufficient even in periods of significant market stress. It has also advised a move towards a confidence level of 97.5% as against the 99% confidence level of the VaR measure. The move should provide a similar level of risk capture, along with a stable model output and less sensitivity to extreme outlier observations. The ES calculation thus reached must be calibrated to a period of stress.

ES has an edge over VaR as it captures tail risk better. VaR measures only a single quantile of profit/loss distribution and does not consider the loss beyond the VaR level. However, Expected Shortfall takes loss beyond confidence level into account as a conditional expectation and this leads to a more robust risk measure.

Incorporating Liquidity Horizons

Under internal models, all positions are assumed to have the same market liquidity with a capital horizon of ten days. However, most complex products can have periods of illiquidity as they are not frequently traded.

Hence, the BCBS has proposed the following changes:

- All exposures will be assigned to one of five liquidity horizon categories of ten days, one month, three months, six months and one year.
- Capital add-ons for jumps in liquidity premiums will be incorporated, subject to certain criteria.
- Endogenous liquidity risk, i.e. the liquidity risk relating to portfolio-specific characteristics and thus arising from the bank’s own internal trading behaviour is accounted for.
- Traded instruments will have to be mapped to risk factors and then the risk factors will have to be mapped to liquidity horizons (based upon the liquidity horizon of the underlying instrument).

IMPACT

Incorporating Liquidity Horizons

The implementation and calculation of ES might prove to be difficult in practice. Banks will have to employ advanced simulation and sampling techniques to measure the distribution of tail events, including many more simulation scenarios to get a meaningful sample of tail events. Expected Shortfall backtesting is more complicated than Value-at-Risk backtesting, as both the size and likelihood of losses have to be factored in Expected Shortfall. The size of outliers is a challenge for ES backtests.

IMPACT

Banks will have to set aside additional capital to reflect potential illiquidity of instruments. Liquidity horizons will significantly affect banks trading in complex and structured products.

IMPACT

Banks may face higher capital charges as transferring assets between the trading and banking books becomes more difficult. They will also have to mark to market all trading book positions daily, which can be a challenge as some positions may be illiquid. Treasury securities held as liquidity reserves may have to be considered as part of the trading book.

IMPACT

The use of stressed inputs will increase capital requirements significantly unless compensating measures are taken. The key challenge is to model products and simulate the P&L strip in the desired stress period.
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In addition, transferring positions between the trading book and the banking book would be possible under very strict and rare circumstances, as defined by the Basel Committee and subject to supervisory approval. The aim of reviewing the definitions of the trading book is to make it much less likely that illiquid exposures could find their way into the trading book or that these exposures would be supported by insufficient capital, as was the case in the lead-up to the recent financial crisis.

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- The new approach is based on the concept of a ‘liquidity horizon’, which is the time required to exit or hedge a risk position in a stressed market environment without materially affecting market prices.
- All exposures will be assigned to one of five liquidity horizon categories of ten days, one month, three months, six months and one year.
- Capital add-ons for jumps in liquidity premiums will be incorporated, subject to certain criteria.
- Endogenous liquidity risk, i.e. the liquidity risk relating to portfolio-specific characteristics and thus arising from the bank’s own internal trading behaviour is accounted for.
- Traded instruments will have to be mapped to risk factors and then the risk factors will have to mapped to liquidity horizons (based upon the liquidity horizon of the underlying instrument).
Treatment of Hedging and Diversification

The BCBS believes that existing rules are too accommodative on the risk-reducing benefits of diversification (which can disappear during times of stress) and hedging (which can be imperfect and suffer from basis risk). Hence, it proposes to implement supervisory prescribed correlation coefficients to tighten how much benefit banks may recognise from these effects.

Revised Standardised Approach

The Basel Committee has specified in detail how a bank should calculate the standardised capital requirement for each of the major risk factors: interest rate risk, credit risk, equity risk, commodities, and foreign exchange and options exposures. In contrast to the current standardised approach of the Basel framework, there would be greater recognition of hedges and diversification benefits. As a result, the capital cost of not permitting a bank to use an internal models-based approach as an alternative.

The committee has proposed a ‘partial risk factor’ approach as a revised standardised approach and a ‘fuller risk factor’ approach as an alternative.

In the partial risk factor approach, instruments that exhibit similar risk characteristics would be grouped in buckets and committee-specified risk weights would be applied to their market value. The number of buckets would be about 20 across five broad classes of instruments.

In the fuller risk factor approach, instruments would be mapped to a set of prescribed regulatory risk factors to which shocks would be applied to calculate a capital charge for the individual risk factors. The bank would have to use its own pricing model to determine the size of the risk positions for each instrument, with respect to the applicable risk factors. Hedging would be recognised for more ‘systematic’ risk factors.

Revised Internal Models-Based Approach

The review seeks to revise and enhance the possibility of using an internal model for a specific portfolio. The approval process is to be made more granular at the trading desk level, and could be broken into more discrete steps. At the same time, there are increased requirements for models to capture the full extent of the trading book risk.

The committee wants to address a number of weaknesses with the current risk measurement under the internal models-based approach as follows:

- It is proposed to break the model approval process into smaller, more discrete steps, including at the trading desk level.
- The approach strengthens internal model standards to ensure that the output of such models reflects the full extent of trading book risk.
- Model performance is to be verified more robustly and assessed at a more granular trading desk level.
- The revised approach is a more robust process for assessing whether individual risk factors can be modelled by a particular bank. This would be a systematic process for identifying, recording and calculating regulatory capital against risk factors deemed not to be amenable to market risk modelling.

Public Disclosure

The BCBS has provided a prescriptive set of disclosures for trading book risks at the desk level. Currently, banks have to provide disclosures only at the aggregate trading book level. All banks, even those using the internal models-based approach, will be required to calculate and disclose the results of the standardised approach, which will provide a comparable disclosure measure across banks. Banks with model approval will also have to provide detailed qualitative and quantitative desk-level, model-based disclosures.
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 IMPACT

Reducing the efficiency of hedging for capital purposes will tend to increase capital requirements. Much of the implementation effort will come through a more granular and comprehensive regulatory approval process for risk models.

Banks using models-based approaches will have to report risk capital numbers using both standardised and internal models-based approaches. As there would be a set of disclosure requirements regarding the composition of the trading book, banks will have to upgrade their systems. Banks will require robust systems that can handle higher granularity of data and provide a real-time view of risk.

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If the trading desk does not achieve acceptable P&L attribution or backtesting results, the bank would be expected to calculate capital requirements for that desk using the standardised approach.

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“The Fundamental Review of Trading Book’ is likely to completely overhaul the current capital treatment of banks’ trading activities. Banks will have to redesign their internal regulatory capital models, build a new standardised approach and demonstrate a wide range of capabilities to meet supervisory expectations. These capabilities include new policies that determine what can be included in the trading book, model backtesting and validation techniques, new risk measurement methodologies, and new disclosure frameworks, among others.

In addition, the capital impact could be substantial for certain banks. Banks with current model approvals for most of their trading portfolios could face significant increase in their capital requirements, while banks subject to standardised approaches could experience a decrease. Banks will have to rethink their approach to public disclosures. If banks have to provide disclosures under both the standardised and internal models-based approaches, they would have to explain the differences in risk capital in a manner that maintains the integrity of their internal models-based approaches.”

About CRISIL Limited
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About CRISIL Global Research & Analytics (GR&A)
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