

September 6th, 2012

**Secretariat of the Basel Committee on Banking Supervision
Bank for International Settlements
CH-4002 Basel, Switzerland**

Dear Sir/Madam,

Re: Fundamental review of the trading book

I welcome the opportunity to comment on the Basel Committee's consultative document.

At the outset, it has to be acknowledged that the committee took important immediate measures in July 2009 and introduced a set of revisions to the market risk framework (part of the "Basel 2.5" rules). These sought to reduce the cyclicity of the market risk framework and increase the overall level of capital, with particular focus on instruments exposed to credit risk (including securitisations), where the previous regime had been found especially lacking. This fundamental review of trading book capital requirements build on the series of important reforms that the Committee has already delivered through Basel III. It sets out the key approaches under consideration by the Committee to revise the market risk framework and it is important and most encouraging to see that the Committee is seeking comments from the public in general and from the industry in particular. Below are the comments to some of the questions, namely 1,2 and 8 with regards to this Basel Committee's document. The comments expressed are solely my personal views.

Best Regards,

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1. Which boundary option do you believe would best address the weaknesses identified with the current boundary, whilst meeting the Committee's objectives?

The boundary option which I believe would best address the weaknesses identified with the current boundary, whilst meeting the Committee's objectives is the **valuation-based approach** because all financial instruments will be held at fair value and so subject to market risk (because changes in fair value could lead to a reduction in capital resources under the Basel III definition of capital) would be required to have market risk capital against that risk. Also the trading book boundary would more closely align with the accounting divide between instruments that are recorded at fair value, and instruments that are recorded at amortised cost. Supervisors could expend less resource monitoring the regulatory boundary, with auditors, as part of their current duties, verifying accounting classification. Some of the goals of auditors and supervisors could be better aligned. Finally, the default choice of whether to hold a financial instrument in the trading book or not would be largely dependent on the accounting rules and filters in the Basel III framework. Although the accounting rules may still leave flexibility when designating financial instruments at fair value, arbitrage opportunities are likely to be reduced.

Also under the trading evidence-based approach, the trading book boundary would still be under the control of banks, allowing them (restricted to some extent by the new conditions on the boundary) some flexibility to choose the designation of their instruments provided they are willing to fair value them daily through Income Statement

and accept treatment in the trading book as long as the bank holds the position. There would remain a set of fair valued instruments in the banking book, which would not receive Pillar 1 market risk capital requirements. The consistency of the approach would rely on each jurisdiction performing sufficiently reasonable judgments on the feasibility of trading in different markets – leading to potential disparities in application across jurisdictions.

Concerning risk management standards, under the adjusted valuation-based boundary for financial instruments that are held at fair value but which the bank wishes to designate as banking book instruments, clearly documented hedging strategy evidence and quantitative measures of hedge effectiveness would be required to demonstrate the instruments hedge other banking book instruments as part of interest rate risk management. On the contrary for trading evidence-based boundary, there would need to be more comprehensive internal control requirements to ensure instruments in the trading book are actively managed and monitored to address emerging risks, more documented hedging strategies; Internal audit should review the bank's ability to hedge trading book instruments; monitor liquidity of related markets; and documentation of the expected holding horizon for each instrument.

Under the adjusted valuation-based boundary, no trading intent must be proven for fair value interest rate hedges which would stay in the banking book. It is applicable only to the extent that trading intent is part of the underlying reason for accounting designation as fair value. For trading evidence-based boundary, there is a requirement to document

trading strategies. Stricter requirements on the feasibility of trading an instrument, such as proof of access to relevant markets for trading and hedging. There will also be the need for stronger evidential requirements that trading instruments are actively managed, such as daily monitoring of instrument pricing and liquidity.

External auditors have to enforce the fair value designation under the valuation-based boundary. It may be necessary for supervisors to periodically evaluate the banks' designations. But once an instrument's fair-value designation is determined, the boundary should be relatively easy to enforce.

The adjusted valuation-based approach would require supervisors to monitor documentation supporting designation of fair valued instruments to the banking book, whereas for trading evidence-based boundary, Internal audit would be the first line of control to ensure positions meet the criteria. Supervisors would scrutinize the internal audit control process as well as the composition of the trading book.

Implementation standards should be generally consistent within an accounting regime, under the valuation-based boundary. With harmonisation in accounting regimes, structural differences across jurisdictions should be minimal.

Under the valuation-based boundary, arbitrage opportunities would be minimal to the extent that banks can influence auditor's agreement to fair value designations.

2. What are commenters' views on the likely operational constraints with the Committee's proposed approach to capturing market liquidity risk including the endogenous component and how might these be best overcome?

(1) Requirement to incorporate varying liquidity horizons within the regulatory market risk metric

In practice, the experience with the IRC/CRM has shown that there are implementation challenges with this approach. For example, it is difficult to define a set of underlying behavioural assumptions to underpin the regulatory rollover requirements; in practice, the rollover assumptions embedded within the IRC have sometimes resulted in higher capital charges for more liquid risk positions; and the operational burden of implementing the constant level of risk requirements can be material. Moving to a “liquidation” regime – whereby banks are assumed to shed risk at the end of the liquidity horizon can mitigate some of these concerns.

A key operational constraint in the context of incorporating varying liquidity horizons in the regulatory market risk metric is how to apply risk factor shocks over longer and varying horizons.

There are different ways in which this approach could be implemented in practice.

The first is to apply shocks directly at longer horizons.

Applying long-horizon historical shocks faces the challenge of extracting long-term independent returns from historical time series data. The use of non-overlapping returns appears to be impracticable for risk factors with relatively long liquidity horizons. For example, a sample of 100 returns would require more than eight years of historical data if the liquidity horizon were set at one month. Although overlapping returns could be used to tackle this issue, a drawback of this approach would be to underestimate the tail of the distribution because sudden extreme shocks might be smoothed over time.

Hence this could be introduced over a longer term period of for banks who have kept sufficiently long dated historical data.

The second is to apply short-term shocks and scale the inputs of the market risk model to varying longer horizons.

One drawback of this approach is that it may generate some unrealistically large risk factor shocks. For example, forward rates calculated using a scaled term structure could become negative in some cases. Another possible weakness of this approach is that the scaling technique might not respect the observed correlations between risk factors associated with different liquidity horizons: after scaling, the correlations of the risk factors might be significantly different from observed correlations. This could lead to significant over- or under-estimation of risk.

The third is to apply short-term shocks and scale the output of the market risk model to a single longer horizon.

The key challenge with this approach is how to calculate the weighted average liquidity horizon – and more specifically, what measure of exposures to use for weighting different liquidity horizon categories to arrive at a weighted average liquidity horizon. One option would be to use the mark-to-market value of different instruments. But this might not be suitable: with this choice, derivative contracts with very low mark-to-market values would have no effect on the weighted average liquidity horizon.

Hence statistical and mathematical issues arise over these two methods and if there is no objective criterion to determine the measure of exposures, applying them might prove difficult.

Moreover, the impact of these different modelling approaches on capital outcomes should be assessed by quantitative impact studies and further guidance is to be provided on the incorporation of varying liquidity horizons in the regulatory market risk metric as the application of the different modelling approaches might result in materially different capital outcomes for a given portfolio.

(2) Requirement for banks to hold additional capital against the risks to the valuation of financial instruments from jumps in liquidity premia when the latter are not sufficiently reflected in historical price data.

Market illiquidity poses risks to banks' solvency not only because banks might be unable to exit their risk positions over a short period of time, but also because of swings in liquidity premia that occur in times of stress. Ideally, capital requirements would recognise the time varying nature of liquidity conditions through a forward-looking component, as historical price data used in the regulatory market risk metric might not sufficiently reflect this risk.

However, as it is backward looking, the market risk metric is unlikely to sufficiently capture the risk posed by fluctuations in liquidity premia for new products or in the context of changing market structures. To better capture market liquidity risk in the revised regime, banks should be required to hold capital for jumps in liquidity premia. This approach would complement the proposal to vary liquidity horizons within the regulatory risk metric.

However in many cases, liquidity premia will be reflected in historical price data used to calibrate the market risk metric and, so, requiring additional capital against these exposures could double-count risk.

To deal with this, the Committee is rightly considering requiring banks to hold capital add-ons for potential future jumps in liquidity premia. These capital add-ons would fit within the proposed framework for capitalising “risks not amenable to modelling”.

The endogenous aspect of liquidity relates mainly to portfolio-specific characteristics (for example, particularly large or concentrated exposures relative to the market) that might imply that the cost of unwinding portfolios cannot be taken as given (exogenous) but might be affected by the bank’s own trading behaviour (endogenous).

As such it is recommended to incorporate endogenous liquidity risk in the revised trading book regime by further extending liquidity horizons. Hence in assigning liquidity horizons above the regulatory floors, banks can account for two broad sets of factors: (i) the characteristics of the market itself in times of stress; and (ii) the characteristics of banks’ portfolios relative to the market (eg size of exposures relative to the market). Increasing the liquidity horizon to account for portfolio-specific characteristics would capture the endogenous aspect of liquidity. This approach retains a single concept within the revised trading book regime – that of liquidity horizons.

8. What are the likely operational constraints with moving from VaR to ES, including any challenges in delivering robust backtesting, and how might these be best overcome?

Lessons from the academic literature and banks' risk management practices shows that upon VaR implementation, there is no unique solution to the problem of the appropriate time horizon for risk measurement. The horizon depends on characteristics of the portfolio and the economic purpose of measuring its risk. Second, commonly used square-root-of-time VaR scaling rules (which ignore future changes in the portfolio) have been found to be an inaccurate approximation in many studies. That said, no widely accepted alternative has emerged. Third, there are limitations of VaR models that rely on the use of continuous stochastic processes with only deterministic volatility assumptions. Introducing either stochastic volatility assumptions or stochastic jump process into modelling of risk factors will help to overcome these shortcomings. Fourth, backtesting procedures that only focus on the number of VaR violations are insufficient to determine the appropriateness of the model assumptions. The use of conditional backtesting procedures or other techniques (like the timing of violations or the magnitude of the VaR exceptions) can improve the backtesting process. Finally, no consensus has yet emerged on the relative benefits of using actual or hypothetical results (i.e. Income Statement) to conduct backtesting exercises.

Also, the literature distinguishes, first, between exogenous and endogenous market liquidity risks; and, second, between normal (or current) liquidity risk.

Portfolios may be subject to significant endogenous liquidity costs under all market conditions, depending on their size or on the risk positions of other market participants. According to accounting standards, endogenous liquidity costs are not taken into account in the valuation of the trading books. A first step to incorporating this risk in a VaR measure would be to take it into account in the valuation method. In practice, the time it takes to liquidate a risk position varies, depending on its transaction costs, the size of the risk position in the market, the trade execution strategy, and market conditions. Some studies suggest that, for some portfolios, this aspect of liquidity risk could also be addressed by extending the VaR risk measurement horizon.

VaR has been criticised in the literature for lacking subadditivity. Hence a prominent alternative to VaR is ES, which is subadditive. Despite criticism focused on the complexity, computational burden, and backtesting issues associated with ES, the recent literature suggests that many issues have been resolved or have been identified as less severe than originally expected. Spectral risk measures are a promising generalisation of ES that is cited in the literature.

Stress testing often was implemented as an ad hoc exercise without any estimate of scenario probability or use of a bank's VaR risk measurement framework. More recent research advocates the integration of stress testing into the risk modelling framework. This would overcome the drawbacks of reconciling standalone stress test results with standard VaR model output. Progress has also been achieved in theoretical research on

the selection of stress scenarios. The regulatory stressed VaR approach has not been analysed in the academic literature.

Recently, attention has shifted towards unified approaches to risk measurement that consider all risk categories jointly. Theoretically, an integrated approach is needed to capture potential compounding effects that are ignored in traditional compartmentalised risk measurement approaches (eg separate measures for interest rate, market, credit and operational risk). These might underestimate risk if a portfolio cannot be cleanly divided into sub-portfolios along risk categories. Irrespective of the separation of assets into “books”, it is not always true that calculating different risks for the *same* portfolio in a compartmentalised fashion and adding up the compartmentalised measures will be a conservative estimate of the true risk. This insight is particularly important for “back-fitting packages”, such as the IRC.

A number of studies criticise VaR-based capital rules as being procyclical in nature. This may induce cyclical lending behaviour by banks and exacerbate the business cycle. Another criticism of VaR-based capital rules is that banks may fail to consider system-wide endogeneity in their internal decisions. If all banks do this, they may act uniformly in booms and busts leading to instabilities in asset markets. Unfortunately, the literature does not offer convincing alternatives.

From a survey of industry practices, it was found that for day-to-day risk management the use of one-day VaR is universal among banks surveyed. However, for internal capital adequacy and strategic risk management, banks are generally moving beyond short-horizon models (eg one-day and 10-day VaR). It is now acknowledged that, to determine the level of capital necessary to remain in business after sustaining a large loss, risk must be assessed over a longer holding period. Shorter horizons do not address the liquidity risk for all exposures and do not capture tail events that are important for capital adequacy. Some banks are developing risk models with varying holding periods for risk assessment across products and conditional on the market liquidity of the exposure, though validation will be difficult.

Many banks see the need for a measure of risk for exposures that are hard to capture in traditional VaR models. Stress tests are utilised but most view that risk needs to be assessed over a range of possible scenarios because the nature of the next crisis cannot be predicted. Consequently, more ambitious comprehensive statistical models of stress scenarios are used. Such models allow systematic assessment of risk across multiple stress scenarios beyond those present in historical data sets. These approaches are similar to reverse stress tests in that they are sensitive to the scenario to which the bank is most exposed. Alternatively, some banks recommend the use of risk-sensitive add-ons to risk model outputs for exposures whose risks cannot be reliably measured with VaR. These banks believe that use of add-ons where complexity and model uncertainty exist would be preferable to blunt risk-insensitive standardised measures. The same complexity and

measurement issues that are challenges for VaR models are likely to affect the robustness of standardised risk weights.

Moreover, nonlinearities in exposures are captured in most banks models to some degree albeit imperfectly. Almost all banks' VaR models capture nonlinearities at a local level (small price changes) for much of their market risk exposure, but many banks' VaR models fail to capture non-linearity at a global level (large price changes). A common weakness in the capture of non-linearity is the use of scaling of one-day VaR to estimate exposures at longer holding periods. Such scaling only captures local non-linearity in the range of one-day price changes and can underestimate non-linear exposure over longer horizons, even when full revaluation is used. Hence Expected Shortfall is preferable.