

Summary of questions

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

Answer 1: I believe that the valuation based approach would best address the weaknesses identified with the current boundary. I would like to point out that in India the same has been in existence already for the market risk capital adequacy guidelines as per standardised measurement method (SMM). Thus the trading book for the purpose of capital adequacy as per SMM includes:

- (i) Securities included under the Held for Trading (HFT) category
- (ii) Securities included under the Available for Sale (AFS) category
- (iii) Open gold position limits
- (iv) Open foreign exchange position limits
- (v) Trading positions in derivatives, and
- (vi) Derivatives entered into for hedging trading book exposures

This provides a natural alignment in the way in which capital adequacy computation is carried out, the manner in which front office manages the books and the way in which the risk limits are set (i.e. similar treatment for AFS and HFT positions).

However, the guidelines on the Internal Models Approach (IMA) for market risk capital computation currently applicable in India excludes the AFS portfolio thus creating a divergence in how the capital is computed as per IMA and as per SMM and also between the way capital would be computed as per IMA and the way the internal risk limits are set (thus impacting the 'use test'). This I feel would incentivise the banks to keep very small part of their positions in the HFT book. The incentive is further increased due to the difference in market risk capital as per IMA and SMM. Thus the main advantage of IMA over SMM i.e. risk sensitivity may get lost.

The valuation based approach would ensure coherency between the manner in which positions are seen by the finance, risk and front office departments.

Question 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?

Answer 2: On the issue of incorporating varying liquidity horizons in the regulatory market risk metric my observations on the three options are as follows:

Option 1: The main drawback that I see with this option apart from challenge of extracting long-term independent returns is that the option does not elaborate on how the capital for risk factors with shorter liquidity horizon (say equity) be integrated with risk factors with longer liquidity horizon (say credit). Without having a differential treatment for risk factors with different liquidity horizons and a clearly defined path of how to integrate the two numbers the option would not be risk sensitive.

Option 2: This option would be very cumbersome to implement considering that the scaling up factor would be applied on the inputs rather than the outputs. The variant of this option which technically is more accurate would first require generation of scenarios with variable horizons for variable risk factors. Currently the banks would either have one day or ten day movements of risk factors hence the scenarios would need to be regenerated if the base data has been purged. As the next step, the scenarios would need to be scaled up in a spread sheet and then uploaded in the system for further processing. Should the liquidity horizon for a risk factor change over a period of time, the scenarios or the scaling up factor would have to be changed and scenarios reloaded in the system. Technically, while this is a good option but operationally this does not build up on the systems and capabilities which most banks would be having currently.

Option 3: This option is the best option in that it balances theoretical accuracy with operational ease. The Committee may look at say VaR or expected shortfall for a risk factor category for arriving at a weighted average liquidity horizon which I feel are better alternatives over notional or exposure at default.

On the issue of accounting of endogenous liquidity risk, I feel that this should be built in the valuation model itself since valuation is the base on which risk should be computed and if say hypothetically a Bank is having huge positions in a particular product which makes it susceptible to liquidity risk then that risk should first reflect in the valuation itself. Also the benefit of maintaining a uniform approach to accounting for endogenous liquidity risk for banks in the revised models-based and standardised approaches is too big to ignore.

Question 3: What are commenters' views on the proposed regime to strengthen the relationship between the standardised and internal models-based approaches?

Answer 3: The Committee's proposal for establishing a stronger relationship in the initial calibration of the two approaches is a welcome move. This to a great extent would address the level playing field concern which the Banks are currently facing in jurisdictions where the difference in the capital computed as per the two approaches is very high (please refer Annexure II). It is also suggested that there should be a process in place for a review of the parameters/multipliers used in the standardised approach on atleast an annual basis so that the changing market volatility/dynamics which get captured in the internal models approach automatically, also gets captured in the standardised approach.

The proposal for computing capital as per standardised approach mandatorily by all the banks is also a welcome move considering the benefits it would have in facilitating comparison between banks and across jurisdictions. However the frequency of such a computation must be laid out and a quarterly frequency I feel should be sufficient. In case the frequency is kept at lesser than quarterly intervals (say daily) it would result in putting too much operational burden on the banks considering the complexity involved in the computations. Certain assets in say AFS category are valued only on a

monthly/quarterly basis and insisting on a daily computation would result in numbers which are neither accurate and nor looked at seriously by the banks.

A floor based on standardised approach is also a welcome idea but as mentioned above the frequency of carrying out the computation as per standardised method must be laid down.

It however may be kept in mind that proposal 1, 2 and 3 when seen together and also when seen along with the proposal of desk-level approach to achieve a more granular model approval process makes the internal models approach almost redundant. This is because benefits in terms of lower capital charge would get curtailed (as per proposal 1 and 3) while the costs of compliance, complexity and operational risk would increase manifold (as per proposal 2 and 3 and desk level approach to achieve a more granular approval process).

Question 4: What are commenters' views on the Committee's proposed desk-level approach to achieve a more granular model approval process, including the implementation of this approach for banking book risk positions? Are there alternative classifications that might deliver the same objective?

Answer 4: As mentioned above while the proposal is good however the complexity involved and the increase in costs and complexity makes the migration to an IMA approach redundant. It also has an operational issue attached to it that say if 5 desks pass the regulatory test and 3 desks don't then the Bank would have to compute capital for the 5 desks as per IMA, for the remaining 3 desks as per SMM and then again compute capital for all 8 desks together as per SMM. This just makes the whole process very complex and not worth implementing considering the costs and benefits involved.

Question 5: What are commenters' views on the merits of the "direct" and "indirect" approaches to deliver the Committee's objectives of calibrating the framework to a period of significant financial stress?

Answer 5: The direct method and indirect method both suggest identifying the relevant historical period of stress for the Bank's current portfolio. This would change daily. Thus in the strictest terms this would involve calculating expected shortfall over say last ten year's data and considering that number for the computations. Since expected shortfall by as per the guidelines would involve full repricing hence the computations would be very time consuming and hardware intensive and need to be completed in a reasonable period of time not extending a day. As an alternative banks may be allowed to identify a period when very high movements were seen in majority of the risk factors that the bank takes positions in and the higher of the absolute number of both the tails may be used which would avoid the problem of the period becoming beneficial for a bank based on its portfolio composition.

Question 6: What are commenters' views on the merits of the desk-based and risk-factor-based aggregation mechanisms to deliver the Committee's objectives of constraining diversification benefits?

Answer 6: Grouping desks based on primary risk factors seems to be a better method since the person managing the desk and risk should be looking at it at an aggregate level and not separately. For example, while managing a corporate bond book the same person is in charge of managing the interest rate as well as credit spread risk in it. Hence the capital computation may be aligned with that treatment to confirm to the 'use test'.

Question 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?

Answer 8: The Committee's view that any methods which do not rely on full repricing would not be appropriate for the computation of expected shortfall would involve major upgrade to systems for banks which do not compute VaR for all or some of the products based on the full repricing method. Also this would require separate runs for computing internally modeled capital charge separately for each risk class as well as for all risk classes together (as opposed to say only two runs under the VaR based approach i.e. normal VaR and stressed VaR). The Committee may look at allowing models other than full repricing models subject to backtesting criteria being met.

Annexure II

Equity position in Indian Benchmark index (Sensex):

The 99th percentile ten day drop in the Sensex observed during the last one-year period was about 9.8%.

The 99th percentile ten day drop in the Sensex observed from April 1, 2008 to March 31, 2009 (assumed stressed period) was about 25.3%.

Assuming an investment of Rs. 100.0 million in Sensex

Capital allocation ~ 3 * 10-day VaR + 3 * 10-day Stressed VaR

Capital = $3 \times 100 \times 9.8\% + 3 \times 100 \times 25.3\%$ = Rs. 29.4 million + Rs. 75.9 million = Rs. 105.3 million

Thus for an investment of Rs. 100 million, the capital allocation would be Rs. 105.3 million (this is only for general market risk charge)!!

On the other hand as per the existing standardised approach the capital allocation is 100 million * 9% for general market risk i.e. Rs. 9 million.