Impact of Basel 2.5 & Basel 3 on Risk Appetite Frameworks

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RiskMinds, December 5, 2012
A risk appetite statement can be defined as the total risk that an organization is willing to take in order to achieve its strategic objectives and meet its obligations to stakeholders.

The amount risk an organisation is prepared to take at a ‘risk type’ or business unit level.

Specific thresholds or targets for key risk metrics across risk classifications.
Basel Timeline

1988 - First Basel Accord
- Simple rules for credit risk

1996 - Market Risk Amendment
- Banks can use VaR for Trading assets, given regulatory approval

2000 - Basel 2
- Banks can use internal ratings (‘IRB’) for credit risk...
- …and internal models (‘IMM’) to compute OTC derivatives exposure
- Incremental Default Risk add-on to VaR for Trading assets
- Operational risk charge introduced

2006 - Basel 2.5
- A set of complicated new charges for Trading assets,
- Basel’s first response to credit crisis

2010 - Basel 3
- Comprehensive response to credit crisis
- Increased capital for Counterparty exposures, and new charges for CVA
- Tighter definition of what banks can count as ‘capital’
- Surcharge for ‘systemically important’ firms
- Moving beyond capital and risk; new rules for liquidity and leverage

2011 - Basel’s first response to credit crisis

2013 - Basel 2.5
- A set of complicated new charges for Trading assets,
- Basel’s first response to credit crisis

2018 - Basel 3
- Comprehensive response to credit crisis
- Increased capital for Counterparty exposures, and new charges for CVA
- Tighter definition of what banks can count as ‘capital’
- Surcharge for ‘systemically important’ firms
- Moving beyond capital and risk; new rules for liquidity and leverage

Fundamental Review of the Trading Book
- Trading book & banking book boundary
- Use of expected shortfall
- Calibrating framework to a period of significant financial stress
- Incorporating market illiquidity
- Reduce model risk
- A revised standardised approach
The Credit Crisis

- Main sources of losses at banks in 2007-2008 crisis:
  - Systemic asset price falls on credit asset, particularly securitizations
  - ‘Wrong way ‘counterparty exposure to monoline exposures
  - CVA losses from counterparty spreads widening
  - Relatively few direct losses from outright defaults, aside from monoline case

- In many cases, the largest losses (e.g. on structured credit) were seen in asset classes for which banks did not have model approval;
  - Regulatory capital was based on standard rules, which was still insufficient for the losses which occurred
  - While it’s true that VaR models did not and could not have done any better, the role of “low VaR-based capital requirements” as a cause of the credit crisis seems exaggerated
Firms’ motivations for internal models

Gaining model approval requires a large investment of time and money, especially in a post crisis world

- What is the motivation?
  - Market Risk: the use of banking book standard rules – based on gross notional – is unsustainable for a flow trading portfolio. VaR model approval is a ‘must have’ for firms wishing to be active in this space
  - Counterparty Credit Risk: similar to market risk, exposure calculation based on gross notional is hard to sustain for firms with large OTC derivatives business, need to get IMM approval
  - Credit Risk: benefit from IRB approval is more limited, in some respects IRB approval is a matter of regulatory expectation on major firms, rather than driven by capital reductions
  - Operational Risk: similar to credit risk, the capital benefit of internal model approval is limited
Internal models based on Regulatory Capital rules

- Investment in internal models is also leveraged for internal risk management purposes but what happens if conservative regulatory rules on internal models mean they depart from economic reality?

- The regulatory models are not closely aligned to the underlying risk for a number of businesses and products

- And some products are now excluded from the models

- But RWA’s represent the actual capital that must be held and are now the binding constraint

- How should RWA’s be incorporated into existing Risk Limit Frameworks?
RWA’s are the binding constraint

- Financial resources are constrained and RWA metrics are being incorporated into decision making
- The focus is on impacted businesses and significant transactions
- Have Risk Limits (based on Economic Capital models) been superseded by RWA Limits or how can they be used together effectively?

What does effectively mean:

- RWA Limits can be applied to businesses but would not be risk sensitive enough for use at the desk level
- Incremental RWA’s can be important at the transactional level
- Economic Capital models still provide the best assessment of risk
### Basel 2.5

#### Summary of Key Changes

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<th>Securitisation Framework</th>
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<td>Stress VaR has a broad impact across the Trading book, since virtually every asset class experienced higher volatility in 2008</td>
<td>Firms are required to explicitly model potential losses from issuer default and upgrade/downgrade at 99.9% confidence over 1 year</td>
<td>Firms are required to model losses from all types of market risk at 99.9% confidence level over 1 year</td>
<td>Securitisations of retail debt, all re-securitisations and non-linear exposure to securitisations is ineligible for internal models treatment</td>
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<td>The impact will be particularly severe for risks which saw extreme volatility in 2008, such as: Credit spread risk &amp; Implied Vol (vega) risk</td>
<td>Concentrated single issuer exposures generate the most severe capital charge in IRC</td>
<td>The CRM model is also subject to a floor based on the banking Book rules, multiplied by 8%</td>
<td>Securitisations and resecuritisations are capitalised using more severe banking book approach except for correlation trading</td>
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Stressed VaR

- How will the model be used in the day to day risk management framework?

  **Use Test**
  - EBA Guidelines state: “Stressed VaR output should be in place as a supplement to the risk management analysis based on the day-to-day output of a VaR model.”
  - How should Firm’s use Stressed VaR?

  **Risk Limits**
  - Should stressed VaR limits be set? If yes…
  - At what level should Stressed VaR limits be implemented at: Legal Entity, Business Line, Desk level?

  **Challenges**
  - Granular stressed VaR Limits may change significantly when the “SVaR window” is updated
  - The impact of SVaR on individual names

  **Observations**
  - Do all of the stakeholders understand the drivers for changes in SVaR?
  - There may be different SVaR windows for different Legal Entities
IRC & CRM

- How will the models be used in the day to day risk management framework?

- Should Limits be set based on IRC and CRM?
- Should IRC and CRM be incorporated in Economic Capital Models?

- Should IRC Limits include the Correlation Trading portfolio?
- At what level should limits be implemented at: Legal Entity, Business Line, Desk level?

- CRM applies to the Correlation Trading Portfolio which is a regulatory divide that is not representative of the way risk is managed

- Securitisations of retail debt, all re-securitisations and non-linear exposure securitisations are ineligible for internal models treatment
Basel 3 - overview

- Basel 2.5 is an attempt to deal with perceived shortcomings in the regulatory capital framework for market risk. What about other risk types?
  - No major perceived issues with operational risk, this is unchanged from Basel 2.0
  - Rules for loan portfolios seen to have worked reasonably well, few changes here
  - Counterparty credit risk, and CVA in particular, seen to be seriously under-capitalized

- Basel 3 introduces additional capital charges for counterparty credit risk

- Basel 3 also attempts to address issues perceived to have contributed to the credit crunch, beyond regulatory capital:
  - Application of a non-risk-based leverage ratio in addition to risk-based regulatory capital
  - Introduction of counter-cyclical capital buffers
  - Introduction of global standards for liquid assets to be held by banks, and limits the use of short-term wholesale funding
  - Restricting the types of liability which can be counted towards regulatory capital
  - And more…….
Basel 3 – Counterparty Risk and CVA

- These will be modified by Basel 3 as follows:
  1) The ‘asset correlation’ for counterparties in the Financial sector* is increased
     - Attempts to capture the perceived inter-connectedness amongst Financial companies
     - This means for a fixed level of exposure, trades with Financial sector counterparties attract more capital than non-Financials
  2) IMM firms also have to compute ‘Stressed Exposure’, using an exposure model calibrated to a period of market stress
     - Similar to ‘Stress VaR’ from Basel 2.5, but we take the maximum of capital based on Exposure and Stressed exposure, not the sum
  3) A new capital charge is created for CVA risk, which applies** to all firms, whether using Std Rules or IMM
     - Based on Spread01 exposure on Asset CVA, net of designated CDS and CCDS hedges
     - Conceptually similar to VaR-based capital, we take $3 \times \text{VaR}(10\text{-day, } 99\%) + 3 \times \text{SVaR}(10\text{-day, } 99\%)$, but are not permitted to diversify this with Trading VaR
     - Expected to lead to a material increase in capital for CCR, especially on un-margined trades and poorly rated counterparties

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* Defined as regulated financial firms with > $100MM of assets, and all unregulated financial firms
** The details of the rules vary depending on whether a bank has IMM and VaR model approvals
Basel 3

- Will the regulatory capital models be used in the day to day risk management framework?

**CVA**
- How does regulatory CVA compare with the way the CVA desk manages risk?
- DVA is not included in regulatory CVA

**Stressed EPE**
- Regulatory capital will be the higher of Stressed EPE and EPE
- PE is currently used for risk management purposes and demonstrates use of the model

**Observations**
- Basel 3 may become Basel 3.5 or Basel 4 as regulators continue to create “new rules”
- There is need for a more defined view of the role of Economic Capital & Regulatory Capital in the context of Risk Limit Frameworks
Future Developments

- The BCBS’s ongoing policy work continues...........
  - Liquidity
  - Fundamental Review of the Trading Book and review of the securitisation rules
  - Standardised Approaches for credit and operational risk
  - Large Exposures regime

- Capital Planning has started to receive supervisory attention and the BCBS has formed a task force to examine current industry practices and develop guidance on good practices. The focus is on:
  - Processes for establishes targets for the level and composition of capital
  - Monitoring and decision making with respect to capital
  - Linkages to strategic plans
  - Coordination with the assessment of firms’ risk profile and appetite