Pillar 2 and the Potential Role of Economic Capital Models In Basel II Implementation

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Agenda

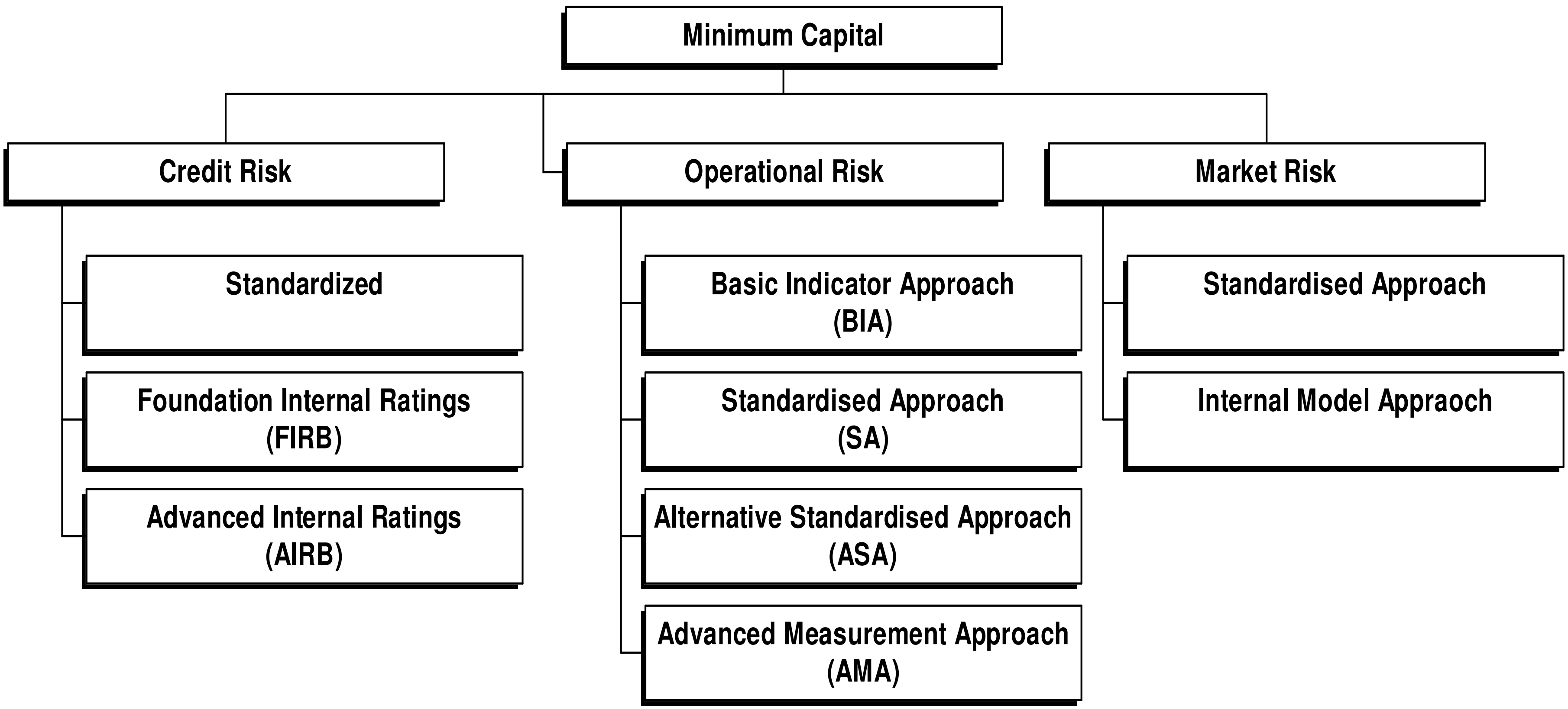
- Overview of the New Accord
- Overview of the specific role of Pillar 2
- Reviewing the different capital measurements under the New Accord
- Building a capital adequacy assessment process (CAAP): risk measurement and the role of economic capital models
- Supervisory issues that will likely arise from the use of economic capital models for Pillar 2 purposes
- Likely next steps in respect of Pillar 2 implementation

Overview of the New Accord: The Three “Pillars”

Three Mutually Reinforcing Pillars:

- **Pillar 1: Minimum Capital Requirements**
  - Promote a progressive and risk sensitive approach to calculating minimum capital
- **Pillar 2: Supervisory Review Process**
  - Ensures banks comply with the minimum standards and disclosure requirements of the Accord, encouraging better risk management techniques
- **Pillar 3: Market Discipline**
  - Enhanced public disclosure from banks to help market participants discipline banks’ risk-taking behaviour

Overview of the New Accord: The Structure of Pillar 1 Minimum Capital



Overview of the New Accord: Pillar 2 – The Supervisory Review Process

- The Basel Committee has identified four principles of supervisory review, viz.
  - Principle 1: Banks should have a process for assessing their overall capital adequacy in relation to their risk profile and strategy for maintaining their capital levels
  - Principle 2: Supervisors should review and evaluate banks' internal capital adequacy assessments and strategies, as well as their ability to monitor and ensure their compliance with regulatory capital ratios. Supervisors should take appropriate supervisory action if they are not satisfied with the result of this process.
  - Principle 3: Supervisors should expect banks to operate above the minimum regulatory capital ratios and should have the ability to require banks to hold capital in excess of the minimum.
  - Principle 4: Supervisors should seek to intervene at an early stage to prevent capital from falling below the minimum levels required to support the risk characteristics of a particular bank and should require rapid remedial action if capital is not maintained or restored.

Overview of the New Accord: Specific Issues to be Addressed Under Pillar 2

- Interest Rate Risk in the Banking Book
- Operational Risk
- Credit Risk
  - Stress Tests Under IRB
  - Deviations from the reference definition of default
  - Residual Risk from Credit Risk Mitigation (CRM)
  - Credit Concentration Risk
- Securitization
  - Significance of Risk Transfer
  - Market Innovations
  - Provision of Implicit Support
  - Residual Risks
  - Call Provisions
  - Early Amortisation
- Supervisory Transparency and Accountability

Reviewing Different Capital Measurements under the New Accord

- Supervisors would potentially analyse four different capital measurements:
  - Minimum capital requirement under Pillar 1
  - Bank's own assessment of capital requirement, i.e., their CAAP and economic capital
  - Supervisory target capital requirement (e.g., well capitalized regimes, individual assessments or supervisory judgment)
  - Actual capital held by the bank (e.g., regulatory capital, legal capital, economic capital, rating agency capital)
- No formal capital requirement under Pillar 2, but supervisors expect that banks will operate above the minimum requirement (Principle 3)
- Supervisors do not necessarily have their own hard-wired calculation of a capital requirement, i.e., no absolute benchmark, but will use judgment in assessing the adequacy of the CAAP process, and consistency between regulatory capital requirement and internal economic capital allocation
- Difference expected between Pillar 1 minimum capital requirement, bank's allocated economic capital, and the actual capital held. Banks must provide a description of the difference and the impact/rationale of the difference
- Long-run convergence between regulatory capital and Banks' CAAP capital?

A Supervisory Perspective on “CAAP”

- Pillar 2 is about the supervisory review process and builds on the existing practices of supervisors
- Pillar 2 is more than just minimum capital (i.e. Pillar 1) - it is a holistic view of a Bank in respect of the way it manages its risk profile and capital adequacy
- Pillar 2 is not about micro-managing banks; further supervisory guidance may therefore be limited in this regard
- However, there are overlaps with Pillar 1 supervisory processes and Guidance related to Pillar 1 may therefore have an indirect impact on Pillar 2 assessments
  - Many of the supervisory processes associated with Pillar 1 will receive guidance (e.g. collateral management, risk quantification of IRB parameters, etc.).

Building a CAAP: The Role of Banks

- Pillar 2's Principle 1 states: "*Banks should have a process for assessing their overall capital adequacy in relation to their risk profile and a strategy for maintaining their capital levels.*"
- Banks are expected to build a comprehensive overall capital adequacy assessment process (CAAP)
- A bank's CAAP process will depend on the nature, size and complexity of the bank. For sophisticated banks, a bottom up approach is desirable based on a reasonable use of analytical tools as inputs into the CAAP
- The bank should have an explicit, board approved capital policy to state objectives, time horizon for achieving them, capital planning process, responsibilities of various parts of the CAAP, and relevant limits related to capital
- The bank should have a process to identify all risks inherent in its portfolios, a system to measure all the identified risks, and regular and adequate internal reporting to the Board and senior management on the CAAP

Building a CAAP Process: Risk Identification and Measurement

- Banks will be expected to identify all relevant and material risks
  - Credit risk, Market risk, Operational risk
  - Interest Rate risk, FX risk, Commodity risk
  - Liquidity risk
  - Strategic risk, Investment risk
- Banks will be expected to measure all relevant and material risks
  - Not all risks are easily measurable, but they will need to be accounted for. How?
  - Portfolio diversification
  - Correlation among risk types
  - For example, measure credit risk:
    - Estimate individual level credit risk parameters (e.g., PD/LGD/EAD) or assign capital factors with respect to risk features of the credit (e.g., credit rating, tenor)
    - Develop portfolio-level Economic Capital models: for each portfolio with homogeneous risk/loss feature
      - Simulate portfolio loss distribution
      - Use vendor's model
      - Use internal estimate of risk parameters and regulatory capital functions

Building a CAAP Process: The Role of Economic Capital Models (1)

- Certain risks will be more easily captured by formal modeling than other types of risks, e.g., market and credit risk vs. strategic risk
- An economic capital model may be an approach to assess risks that lend themselves to formal modelling by attempting to answer the question: how much capital do I need?
  - In theory, the economic capital requirement is the amount of capital a firm determines that it should hold to provide a specified level of safety or "target solvency"
  - It is determined by the bank based on its business objectives and risk tolerance – not by the supervisor
- However, while economic capital models may help quantify capital *within* a risk category (e.g. "market" or "credit"), they may not necessarily quantify capital *across* all risk categories (because diversification/correlation across credit, market, liquidity, strategy risks, etc. is not well developed)

Building a CAAP Process: The Role of Economic Capital Models (2)

- Components that are generally applicable within Economic Capital models include:
  - Time horizon (e.g., 1 yr)
  - An implied Confidence level (e.g., 99.95%)
  - Portfolio effects: diversification, correlation
  - Model specific risk parameters (e.g., PD, LGD, EAD, Transition Matrix) or portfolio loss distribution
- Use of Economic Capital models (good for use test)
  - Solvency or capital adequacy test (e.g., regulatory, rating agency, internal)
  - Performance measurement and incentive compensation (e.g., RAROC, Economic Profit)
  - Active portfolio management for entry/exit decisions (e.g., performance measurement, risk diversification, portfolio optimization)
  - Deal making/pricing new business (RAROC, hurdle rate)

Supervisory Issues

- Supervisors to draft guidance on criteria and expectations on banks for the implementation of Pillar 1 and compliance to the New Accord in the near future
- Supervisory knowledge, risk assessment workflow and monitoring processes will need to keep pace with development work in risk measurement
- Growing industry expectation (and pressure) that supervisors should allow a full "internal models" approach for credit risk
- Gaining an understanding of the potential divergence between banks' own assessments of capital adequacy and supervisory expectations for minimum (and 'target') capital

Likely Next Steps for Supervisors in Pillar 2 Implementation

- Supervisors will need to assess current scope of examination and will likely need to build a process to handle future “capital” examinations
- Major impact areas for OSFI:
  - enhanced monitoring
  - new on-site supervisory workflow
  - scope and frequency of on-site reviews
- Supervisors engaged in range of stocktaking exercises to better understand and develop new supervisory practices around key areas such as, economic capital reviews.
- Developmental efforts to support any subsequent revisions to the New Basel Capital Accord.