Enterprise Risk Management

ERM

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Where Cutting Edge Theory Meets State of the Art Practice

2011 ERM Symposium
March 14-16, 2011

Swissôtel Chicago
Chicago, IL

ICAAP Required Capital

Assessment, Quantification & Allocation

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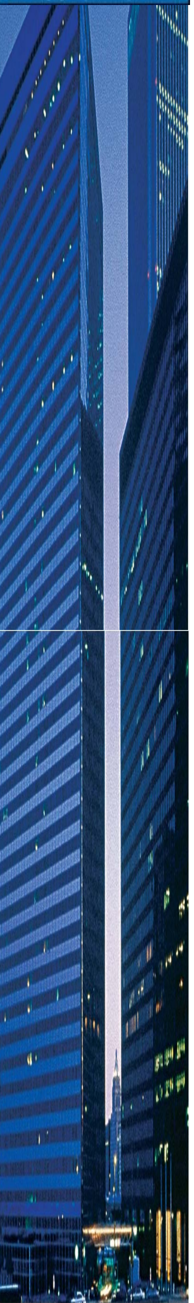
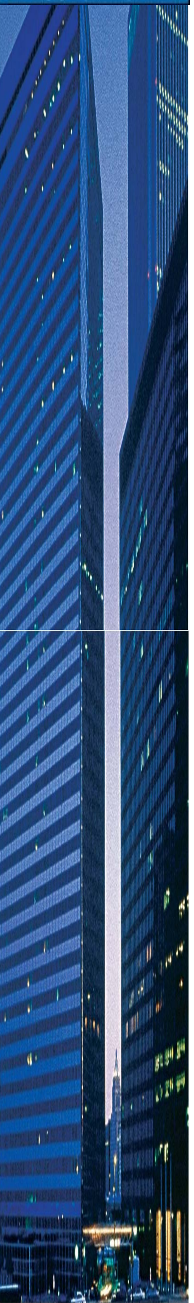
Table of Contents



Key Takeaways

Value Add from the ICAAP

- ICAAP is an umbrella activity that encompasses the governance, management and control of all risk and capital management functions and the linkages therein.
- Strengthens the governance and organizational effectiveness around risk and capital management.
- Brings transparency on the capital assessment process by understanding the key drivers of capital requirement including oversight for reviewing and validating capital requirements.
- Supports opportunities to identify sub-optimal usage of capital across the organization.
- Creates the foundation and basis to have an informed view on capital requirements to assert the Bank's position on capital adequacy against regulatory and/or rating agency capital requirements.



The 3 Pillars of Basel II

PILLAR I

Minimum Capital Requirement

- Credit Risk
  - Standardized Approach
  - Foundation Internal Ratings Based Approach
  - Advanced Internal Ratings Based Approach
- Securitization Framework
  - Standardized Approach
  - Ratings Based Approach
- Operational Risk
  - Basic Indicator Approach
  - Standardized Approach
  - Advanced Measurement Approach
- Market (Trading) Risk
  - General Market Risk
  - Idiosyncratic Risk
  - Incremental Risk Charge (Debt Specific or Migration & Default Risk)

PILLAR II

Capital Adequacy Assessment

- Board and Management Oversight
- Sound Capital Assessment and Planning
- Comprehensive Assessment of Risks
- Stress Testing
- Monitoring and Reporting
- Internal Control Review

Supervisory Review Process

- Annual comprehensive ICAAP reviews
- Stress Testing Review
- Securitizations Review
- Residual Risks Review
- Credit Concentration Review

PILLAR III

General Considerations

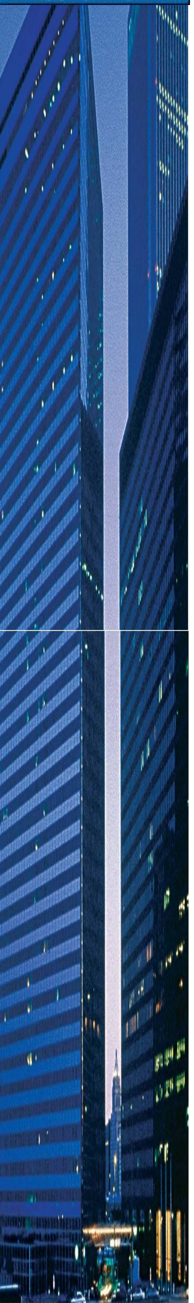
- Guiding Principles
- Interaction with Accounting Disclosures

Disclosure Requirements

- General
- Scope of Application
- Capital Structure
- Capital Adequacy
- Credit Risk
- Market Risk
- Operational Risk
- Interest Rate Risk
- Securitization Risk

What is ICAAP?

- The purpose of the ICAAP is to inform the Board of the ongoing assessment of the bank's risks, how management intends to mitigate those risks and how much current and future capital is necessary having considered other mitigating factors.
- Under the Pillar II auspices of the Basel II Capital Accord, the ICAAP is also how the bank explains to regulatory authorities its internal capital adequacy assessment process.
- Pillar 2 recognizes the necessity of exercising effective supervisory review of banks' internal assessments of their overall risks to ensure that bank management is exercising sound judgment and has set aside adequate capital for these risks.
- The ICAAP constitutes primarily of 6 key features:
  - Board and Senior Management Oversight
  - Sound Capital Assessment and Planning
  - Comprehensive Assessment of Risks
  - Stress Testing
  - Monitoring and Reporting
  - Internal Control Review
- The ICAAP should be an integral part of operations and reflect how firm is managed and organized in practice.



Functional View of ICAAP

REQUIRED (RISK BASED) CAPITAL

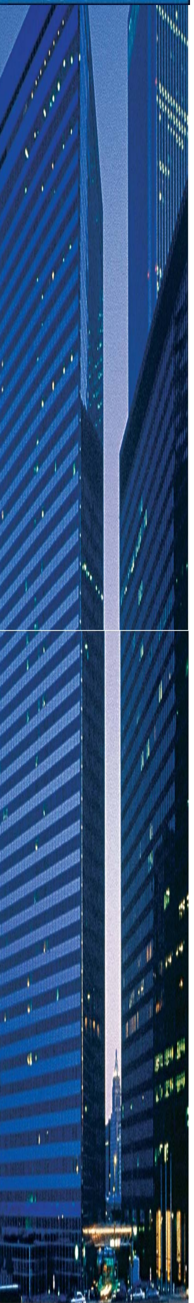
- Risk (Tolerance) Appetite
- Regulatory Minimum
- Stress Testing
- Internal (Economic) View of relating RISK to CAPITAL
- Rating Agency
- Cost of Equity/RAROC
- Capital Forecasting

AVAILABLE CAPITAL

- Capital Planning
- Equity
- Preferred Shares
- Innovative Tier 1
- Subordinated Debt
- Dividend
- DRIP
- Capital Surplus (Deficit)

- RISK IDENTIFICATION
- RISK ASSESSMENT
- RISK QUANTIFICATION
- RISK MITIGATION

CAPITALIZATION

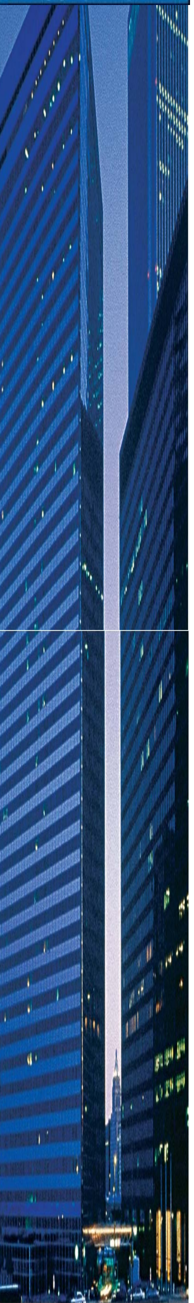


Sound Capital Assessment and Planning

- Sound capital assessment process should include:
  - Policies and procedures designed to ensure identification, assessment, and quantification of all material risks and the linkages therein
  - Process to relate capital to the level of risks – current and future
  - Capital adequacy goals – targets and limits – with respect to strategic and business plans
  - Integrity of overall risk management process through internal controls, reviews and audits
- Key considerations in relating risk to capital:
  - Regulatory, Economic (internal) and Peer comparison of Capital Ratios
  - Credit Risk Concentrations
  - Current and desired Credit Agency Ratings
  - Potential severe adverse events
  - Planned changes in Business or Strategic Plans, identified changes in Operating Environment, or consequential changes in Risk Profile.
- Integrated scenario analysis to evaluate risks and incorporate into overall assessment of capital adequacy. Sensitivities derived from the Enterprise Stress Testing program should be incorporated into Capital Forecasting and Planning.

Comprehensive Assessment of Risks

- Address all material risks – Pillar I (credit, market, operational) and Pillar II (other)
- Credit Risk Assessment should cover, at minimum:
  - Risk Rating System
  - Portfolio Analysis/Aggregation
  - Securitization and complex Structured Instrument
  - Large Exposures and Risk Concentrations (single name, industry, etc)
- Credit Risk Quantification should cover, at minimum:
  - Historical loss experience
  - Current and past economic conditions
  - Attributes specific to a defined group of borrowers
  - Characteristics affecting recoveries
- Securitization Risk should cover risks arising from:
  - Investing activities, multiple tiers of complexity, significant leverage in transaction
  - Contractual support and implicit support to securitization vehicles
  - Return to on balance sheet through amortization and repurchase
  - Disruption in market demand clogging securitization pipeline or requiring originator support
  - Capital and Liquidity implications of above

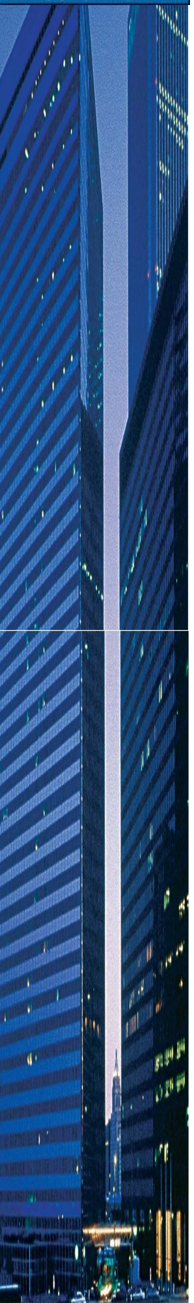


Comprehensive Assessment of Risks (Cont'd)

- Operational Risk assessment and quantification should include:
  - Identify and assess high risk areas within all businesses
  - Formulate hypothesis and quantify risk supported by internal data and industry research
  - Establish process for periodic review and maintenance
  - Develop allocation model for capital
  - Align insurance strategy with operational risk profile
- Market Risk assessment and quantification should cover, at minimum:
  - assessment and management of trading and non-trading market risk
  - VaR Based modelling and stress testing methodologies
  - Rigorous ongoing validation of VaR models
  - Model should be sensitive to changes in trading profile
- Interest Rate Risk in Banking Book should cover risks arising from:
  - Include all material Interest Rate risk positions
  - Well documented and empirically validated hedging assumptions (parameter risks)
  - Cover re-pricing as well as embedded optionality
  - Use of stress testing and scenario analysis given assumptions and model uncertainty
- Liquidity, Strategic and Reputational Risks

Capital Quantification of Risks

#	Capital Component	Regulatory Capital (RWA * x%)	ICAAP Capital View 1	ICAAP Capital View 2
Pillar I Risks				
	Credit Risk			
1	Retail Credit	4.2	4.2	4.0
2	Commercial Credit	3.0	3.0	3.2
3	Wholesale Credit	1.2	1.2	1.5
4	Counterparty Credit Risk	1.2	1.2	1.8
5	Securitization	1.2	1.2	1.4
6	Equity Risk in Banking Book	0.6	0.6	0.8
7	Fixed Asset Risk	0.6	0.6	0.5
8	**Total Credit Risk**	**12.0**	**12.0**	**13.2**
9	Market (Trading) Risk	2.8	2.8	3.2
10	Operational Risk	3.7	3.7	3.7
11	**Total Pillar I Risks**	**18.5**	**18.5**	**20.1**
Pillar II Risks				
12	Market (Non Trading) Risk	-	0.7	0.7
13	FX Risk in Banking Book	-	-	-
14	Credit Concentration Risk	-	0.7	0.5
15	Business Risk	-	0.6	0.4
16	Strategic Risk	-	-	-
17	Liquidity Risk	-	-	-
18	Insurance Risk	-	0.8	0.8
19	Pension Risk	-	-	-
20	Residual Risk	-	-	-
21	**Total Pillar II Risks**	**-**	**2.8**	**2.4**
22	**Diversification Benefit**	**-**	**(3.2)**	**(3.4)**
23	**Total Required Capital**	**18.5**	**18.1**	**19.1**
24	**Available Capital**	**20.0**	**20.0**	**20.0**
25	**Surplus/(Deficit)**	**1.5**	**1.9**	**0.9**



ICAAP and Capital Allocation

Why does capital need to be allocated to operating segments?

- To facilitate appropriate risk adjusted pricing behavior.
- To measure risk adjusted performance in operating segments.

Why was ICAAP (Economic) capital appropriate?

- Provides a comprehensive framework for assessment of risks.
- Based on internal specific loss experience and reflects the unique risk profile of the Bank.
- Provides a means to demonstrate and evidence Bank target debt ratings.
- Required under Basel II & III Regulatory Capital and supports ICAAP.
- Makes available dynamic capital models that enables a superior risk / return measurement framework.

Basel III Impact on ICAAP

- Basel III will result in banks being required to hold significantly higher amounts of capital beginning January 2013.
- This will result in a fundamental and permanent shift in how banks manage and deploy capital.
- Banks will need to ensure sufficient capital is available to meet higher regulatory requirements whilst ensuring no deterioration in performance.
- Capital allocation framework will need to be revised to facilitate effective capital investment decisions.
- Decision on whether to allocate higher of ICAAP and Regulatory capital to operating segments to reduce impact on profitability and shareholder value.
- Relevance of Economic Capital will be challenged in light of much higher Regulatory Capital allocations as Management buy-in wanes.