How internal audit shall concretely address the ICAAP.

IIA Luxembourg
January 25, 2008

This presentation is incomplete without the accompanying discussion.
Agenda

• What is the ICAAP? L. Berliner

• Role of internal audit / Get prepared L. Berliner

• Key points to audit J.P. Peters
What is the ICAAP?
Regulatory background


- 2006: Basel II is transposed to European regulation with the “Capital Requirement Directive” (or “CRD”). The supervisory process of Pillar II is further discussed in guidelines issued by the Committee of European Banking Supervisors (or “CEBS”).

- 2006/2007: CRD is transposed to Luxembourg’s regulation, through circulars 06/273 (credit institutions), 07/290 (investment firms) and 07/301 (complementary information on Pillar II, for all institutions) that repeal and replace circulars 2000/10 and 2000/12.
Regulatory background

Basel II / CRD

Pillar 1
Minimum capital requirements (06/273 and 07/290)

Pillar 2
Supervisory review process (07/301)

Pillar 3
Market discipline (06/273 and 07/290)

Today’s topic

Credit risk
- Securitization
- Standardized Approach
- IRB Foundation
- IRB Advanced

Market risk
- Basic Indicator Approach
- Standardized Approach
- Advanced Measurement Approaches

Operational risk

Today's topic: Credit risk
Pillar II Overview

• Pillar II is made of two concepts:
  – The **Internal Capital Adequacy Assessment Process** (or “ICAAP”): institutions shall ensure
    • they identify and assess all risks they are exposed to (i.e. not only Pillar I risks);
    • they maintain sufficient capital to face these risks and
    • they develop and better use risk management techniques in monitoring and managing these risks.
  – The **Supervisory Review and Evaluation Process** (or “SREP”): supervisors shall be responsible for evaluating how banks are assessing their capital adequacy needs relative to their risks. To perform this role, they are entitled to require remedial actions when capital does not seem to be adequate.
ICAAP definition

"The ICAAP is a set of sound, effective and complete strategies and processes that allow institutions assessing and maintaining on an ongoing basis the levels, types and distribution of own funds that they consider adequate to cover the nature and level of the risks to which they are or might be exposed."*

* : Source: Part XVIII of CSSF Circulars 06/273 and 07/290
Objectives of the ICAAP

1. To ensure that credit institutions have adequate risk management processes to assess, monitor and manage the risks they run and that they hold adequate capital against those risks.

2. To hold capital against risks not (fully) captured by Pillar I.

3. To prevent from regulatory arbitrage (as it was the case, for instance, for securitisation under Basel I framework).

4. Underlying aim: to enhance the link between a credit institution’s risk profile and its capital (convergence towards the notion of economic capital).
ICAAP in CSSF Circular 07/301

- **Structure**: ICAAP will have to include two major components:
  - an internal process to identify, measure, manage and report risks to which the institutions is exposed to or could be exposed to in the future; and
  - an internal process to plan and manage its internal own funds so as to ensure sufficient capital adequacy.

- **Internal review**: the ICAAP should be reviewed
  - by an objective and independent body (internal audit, compliance function, 3rd party experts); and
  - at least annually.

- **Supervisory review**: when reviewing ICAAP, CSSF will put special attention to two points:
  - internal own funds adequacy and
  - internal risk governance.
Conceptual ICAAP framework

• While no formal structure of the ICAAP is defined in circular 07/301, a typical framework can be described as follows:
The first component of the ICAAP shall be related to “quantitative” aspects. It is split into two parts: Risk and Capital.

**RISK MANAGEMENT**

- **Risk identification and quantification**: all risks to which institutions are or could be exposed to (“exhaustiveness” principle). This include hard-to-measure risks such as compliance risk or reputational risk.

- **Stress testing**: institutions should set up a stress test program to assess impact of these extreme yet plausible situations. Indeed own funds should be sufficient enough to cover the impact of such events.

**CAPITAL MANAGEMENT**

- **Capital planning**: institutions are expected to adopt a prospective approach regarding its own funds adequacy, accounting for the time needed to liquidate assets or the time required to acquire additional own funds.

- Contrary to other jurisdictions, no specific **holding period** is specified in circular 07/301, which would depend on the institutions’ growth strategy and plans. This could go from 1 to 5 years.
Internal risk governance

Banks need to ensure that they have a robust risk management framework which:

- links the risk management process with the strategy of the Bank;
- ensures that there is sufficient transparency through to the Board level;
- ensures that all material risks are identified, measured and reported; and
- links capital to the risk which is being taken.

The governance structure needs to ensure that there is integrity of the overall business and risk management process. The key challenges in implementation are:

- ensuring independence of risk functions;
- clarifying key inter-relationships;
- implementing organizational change;
- overcoming political barriers; and
- embedding cultural change.

Sample Governance structure

1st line of defence / Day to day risk management

2nd line of defence / Risk oversight

3rd line of defence / Independent assurance
Role of internal audit / Get prepared
Role of internal audit

• The ICAAP is expected to be reviewed regularly by independent bodies to ensure that
  – the coverage of identified risks is complete and proportionate to the scale, diversity and complexity of the activities and that the amount, the type and the allocation of internal own funds are adequate for the institution’s risk exposure; and
  – internal processes composing the ICAAP are performed in a sound and efficient way.

• In particular, internal audit (together with the compliance function) shall control the second element (integrity and efficiency of the process) as for any other internal process (see §27 and 29 of circular 07/301).

• The extend of the role of internal audit in the review process for the first objective (soundness and completeness of the methodology, relevancy of the assumptions and results, models if any, etc.) will depend on the adequacy of internal audit resources and skills with size and complexity of the ICAAP.
Role of internal audit

- Internal auditors shall keep in mind these three recurring high-level principles when performing their review:

  | Completeness | Effort should be put on making sure any existing and potential risk are identified (even those difficult to measure) and are accounted for assessing adequacy of the internal capital. |
  | Specificity  | Similar to any other internal process, ICAAP is bank-specific, so that no guidelines is given on structure, exact contents, methods, etc. as it is an internal decision. |
  | Proportionality | ICAAP should be in line with the institution's complexity and size. |
Get prepared – Sources of information

• Three documents supporting the ICAAP process are required for all institutions:
  – the risk policy (see point 21 of the circular 07/301);
  – the internal own funds policy (see point 22 of the circular 07/301); and
  – the ICAAP report (see points 17 and 26 of the circular 07/301).

• In addition, other sources might be used, such as
  – operational procedures (“use test”);
  – existing risk and control assessment reports;
  – methodological or model description (might be from Group level);
  – minutes from risk management committee (or similar);
  – minutes from Board and management committee meetings;
  – All documents prepared during the ICAAP implementation and/or supporting the ICAAP process.
Get prepared – Risks

Pillar I risks
- Credit risk
- Market risk
- Operational risk

Other risks
- Settlement risk
- Liquidity risk
- Business risk
- Model risk
- Concentration risk
- Interest rate risk
- AM functions risks
- Inc. Compliance risk
- Inc. Reputation risk

Processes
- Risk management
- Stress testing
- Capital planning
- Governance

Fairness

Supervisory action
- ICAAP improvement
- Own funds increase
- Restriction of business
- Risk exposure reduction
- Proportionality principle
- Individual capital guidance
- Provisioning

ICAAP

SREP

Dialogue

How internal audit shall concretely address the ICAAP

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Key points to audit
I. Risk Management

Key audit points

ICAAP

Internal own funds adequacy

Risk management

Identification

Assessment

Stress testing

Completeness
The risk identification phase shall ensure all risks, existing or potential, are considered within the ICAAP process.

Transparency
The methodology used to assess and measure exposure to risks shall be duly documented, together with the assumptions used during the risk assessment process.

Consistency
Outcomes of the ICAAP (including risk assessment) shall be consistent with existing material such as Long Form Report.
I. Risk Management
Identification and quantification phase

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Applicable to my institution?</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPERATIONAL RISK</td>
<td>Y</td>
</tr>
<tr>
<td>BUSINESS RISK</td>
<td>Y</td>
</tr>
<tr>
<td>CREDIT RISK</td>
<td>Y</td>
</tr>
<tr>
<td>MARKET RISK</td>
<td>Y</td>
</tr>
<tr>
<td>CONCENTRATION RISK</td>
<td>Y</td>
</tr>
<tr>
<td>INTEREST RATE RISK IN THE NON-TRADING BOOK</td>
<td>Y</td>
</tr>
<tr>
<td>COMPLIANCE RISK</td>
<td>Y</td>
</tr>
<tr>
<td>LIQUIDITY RISK</td>
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<tr>
<td>RESIDUAL RISK</td>
<td>N</td>
</tr>
<tr>
<td>SECURITISATION RISK</td>
<td>N</td>
</tr>
<tr>
<td>SETTLEMENT RISK</td>
<td>N</td>
</tr>
<tr>
<td>UNDERWRITING RISK</td>
<td>N</td>
</tr>
<tr>
<td>TRANSFER RISK</td>
<td>N</td>
</tr>
<tr>
<td>INSURANCE RISK</td>
<td>N</td>
</tr>
</tbody>
</table>

Assessment of materiality
E.g. for business risk, management believe that, while unlikely, materialization of the sub-category “client concentration” would render the business non-viable in its current business model => “High” risk.

Quantification of risks
E.g. suffering the departure of one large client would impact projected net revenue by EUR 1.5M (accounting for mitigation techniques)

What is the potential financial impact arising from the crystallisation of this risk?
I. Risk Management

Stress testing

- Stress testing is a risk management technique (quantitative and/or qualitative) used to evaluate the potential effects on an institution’s financial condition of a specific event and/or movement in a set of financial variables. The traditional focus of stress testing relates to exceptional but plausible events.

<table>
<thead>
<tr>
<th>Risk category</th>
<th>Stress test (example)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual risk</td>
<td>Crash of Luxembourg real estate market leading to sharp decline in mortgage value used as collateral.</td>
</tr>
<tr>
<td>Operational risk</td>
<td>Pricing error of a large complex transaction (e.g. derivatives).</td>
</tr>
<tr>
<td>Macro-economic risk</td>
<td>Economic recession at European level, impacting assets under management and launch of new products.</td>
</tr>
<tr>
<td>Interest rate risk</td>
<td>Adverse shift of the yield curve by 200 bps.</td>
</tr>
</tbody>
</table>
II. Capital Management

Key audit points

- Capital management
  - Risk appetite / Capital coverage
  - Capital planning
  - Contingency plan

- ICAAP

- Internal own funds adequacy

- Prospective view
  - Capital shall be adequate for all existing and potential risks, which implies adopting a prospective view (capital / financial / business projections).

- Transparency
  - The methodology used to assess the need (or the absence thereof) to hold capital to cover risks shall be duly documented, together with parameters used (holding period, level of confidence, correlation assumptions, etc.)

- Contingency plan
  - Action plan in case of potential shortage of capital shall exist.
II. Capital Management
Risk tolerance and capital coverage

Available capital resources

Tier 1 Capital
- Common stock
- Surplus
- Retained earnings

Tier 2 Capital
- Net unrealised gains

+ Capital requirements

Capital aggregations:
- Total capital requirements

Pillar 1 + Pillar 2

Element 1
- Adequacy of Pillar 1 risks (Credit risk, Market risk and Operational risk).

Element 2
- Risks not fully covered under Pillar 1 (Residual risk in CRM, model risks).

Element 3
- Risks not covered under Pillar 1 (e.g. Concentration risk, pension obligation risk).

Element 4
- External factors, major stressed events impacting several aspects of risk exposure.

Capital available vs. Capital requirements

Risk appetite / tolerance

Capital adequacy

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II. Capital Management

Capital planning and contingency plan

P&L Statement

1.1 Cash and cash balances with central banks
1.2 Financial assets held for trading
1.3 Financial assets designated at fair value through profit or loss
1.4 Available-for-sale financial assets
1.5 Loans and receivables (including finance leases)
1.6 Held-to-maturity investments
1.7 Derivatives – Hedge accounting
1.8 Fair value changes of the hedged items in portfolio hedge of interest rate risk
1.9 Accrued income from financial instruments
1.10 Tangible assets
1.11 Intangible assets
1.12 Endowment capital
1.13 Tax assets
1.14 Other assets
1.15 Non-current assets and disposal groups classified as held for sale

Total Assets

2.1 Deposits from central banks
2.2 Financial liabilities held for trading
2.3 Financial liabilities designated at fair value through profit or loss
2.4 Financial liabilities measured at amortised cost
2.5 Financial liabilities associated with transferred financial assets
2.6 Derivatives – Hedge accounting
2.7 Fair value changes of the hedged items in portfolio hedge of interest rate risk
2.8 Accrued expenses on financial instruments
2.9 Provisions
2.10 Prudential provisions
2.11 Tax liabilities
2.12 Other liabilities
2.13 Share capital repayable on demand (e.g. cooperative shares)
2.14 Liabilities included in disposal groups classified as held for sale

Total Liabilities

5.1 Financial & operating income and expenses
5.2 Interest income
5.3 (Interest expenses)
5.4 Expenses on share capital repayable on demand
5.5 Dividend income
5.6 Fee and commission income
5.7 (Fee and commission expenses)
5.8 Realised gains (losses) on financial assets & liabilities not measured at fair value through profit or loss, net
5.9 Gains (losses) on financial assets and liabilities held for trading, net
5.10 Gains (losses) on derecognition of assets other than held for sale, net
5.11 Gains (losses) from hedge accounting, net
5.12 Exchange differences, net
5.13 Gains (losses) on derecognition of assets other than held for sale, net
5.14 Other operating income
5.15 Other operating expenses
5.16 Administration costs
5.17 Depreciation
5.18 Provisions
5.19 Prudential provisions
5.20 I i t

Budget Exercise

Business projections integrating planned strategic moves

Contingency plan is triggered, using predefined action plan, e.g.:  
- Dividend reduction  
- Asset liquidation  
- Capital raise  
- Etc.

PILLAR 1 REQUIREMENTS

<table>
<thead>
<tr>
<th>Year</th>
<th>Capital Requirement</th>
<th>Pillar I Capital Requirement</th>
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<tbody>
<tr>
<td>2008</td>
<td>4 €</td>
<td>5 €</td>
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<tr>
<td>2009</td>
<td>4.5 €</td>
<td>6 €</td>
</tr>
<tr>
<td>2010</td>
<td>6.5 €</td>
<td>8 €</td>
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PILLAR II ADD-ON REQUIREMENTS

<table>
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<tr>
<th>Year</th>
<th>Capital Requirement</th>
<th>Pillar II Add-On Requirement</th>
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<tr>
<td>2008</td>
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<td>1.5 €</td>
</tr>
<tr>
<td>2010</td>
<td>1.5 €</td>
<td>1.5 €</td>
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</table>

EXPECTED CAPITAL REQUIREMENT

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<tr>
<th>Year</th>
<th>Capital Requirement</th>
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<tbody>
<tr>
<td>2008</td>
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<td>2009</td>
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<tr>
<td>2010</td>
<td>8 €</td>
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</table>

EXPECTED CAPITAL AVAILABLE

<table>
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<tbody>
<tr>
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<tr>
<td>2009</td>
<td>7 €</td>
</tr>
<tr>
<td>2010</td>
<td>7.5 €</td>
</tr>
</tbody>
</table>
III. Internal Risk Governance

Key audit points

ICAAP

Internal risk governance

A management report summarizing the outcome of the ICAAP process shall be submitted by the executive management to the Board of Directors for approval (at least annually).

Board oversight

A risk policy and a capital policy providing guidance on risk and capital management practices (in line with risk strategy defined by the Board) shall be defined by the executive management.

Management oversight

Roles and responsibilities of the various stakeholders taking part in the ICAAP design, implementation, update, review and validation shall be documented (including but not limited to Board, executive management, finance, risk management, internal audit, compliance and heads of business lines).

Organizational structure

How internal audit shall concretely address the ICAAP
III. Internal Risk Governance
Management oversight and documentation

Institution’s fundamental attitude toward risk, depending on:
- Business model and activities
- Group-wide strategies (rating, cost of funding, etc.)
- Shareholders

Risk and capital strategy defined by the Board of Directors

On a regular basis, the Board of Directors shall be informed on the institution’s risk profile, the adequacy of own funds, the adequacy of ICAAP with the Bank’s structure and needs, the capital planning and the regulatory ratios.
III. Internal Risk Governance
Roles and responsibilities

As third line of defence, internal auditors are responsible of ensuring adequate roles and responsibilities are given to the various stakeholders of the risk management within the bank.

This is not new, as this independent assurance is valid for any internal processes already in the scope of internal audit plans.
Q&A
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