A view on

Operational Risk Management and insurance risk transfer

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Operational Risk Management ?

• Operational Risk Identification and Quantification have revealed process inefficiencies which have been mitigated through optimization activities throughout the organization with the ultimate goal to achieve cost leadership and provide economic value to the organization.

• The continuous monitoring of Operational Risks through Key Risk Indicators (lagging and leading indicators) allow the effective steering of processes providing senior management with reliable business intelligence for decision making (i.e. allocation of resources and capital)

• Companies have a thorough understanding of their insurable risks and apply their operational risk data to effectively purchase their insurance coverage based on agreed risk appetite statements

Operational Risks in Swiss Banks – Deloitte study
Excerpt of key findings out of the study

- **In light of the short life spans of most of the databases so far, the majority of banks do not have a statistical data basis sufficient for the assessment of operational risk and are thus unaware of the full scope of their operational risks**

- **The overwhelming majority of Swiss banks use the simplest approach to measure their operational risk capital charge. A large number of these banks are required to provide less than CHF 100 mio. of their own capital resources to cover operational risks.**

Recently placed question on LinkedIn

"Why have banks not yet taken full advantage to reduce their operational risk capital charge through more effective insurance purchasing."

and have received the following answer which I think is a reflection of the situation within many banks. "Great question. Except where banks are using an internal capital model, I suspect the problem is that they don't have enough quantitative information on operational risks to be able to make reliable decisions as to where insurance coverage will have a beneficial impact on capital."

Quantifying Operational Risk to satisfy regulatory requirements is a costly exercise

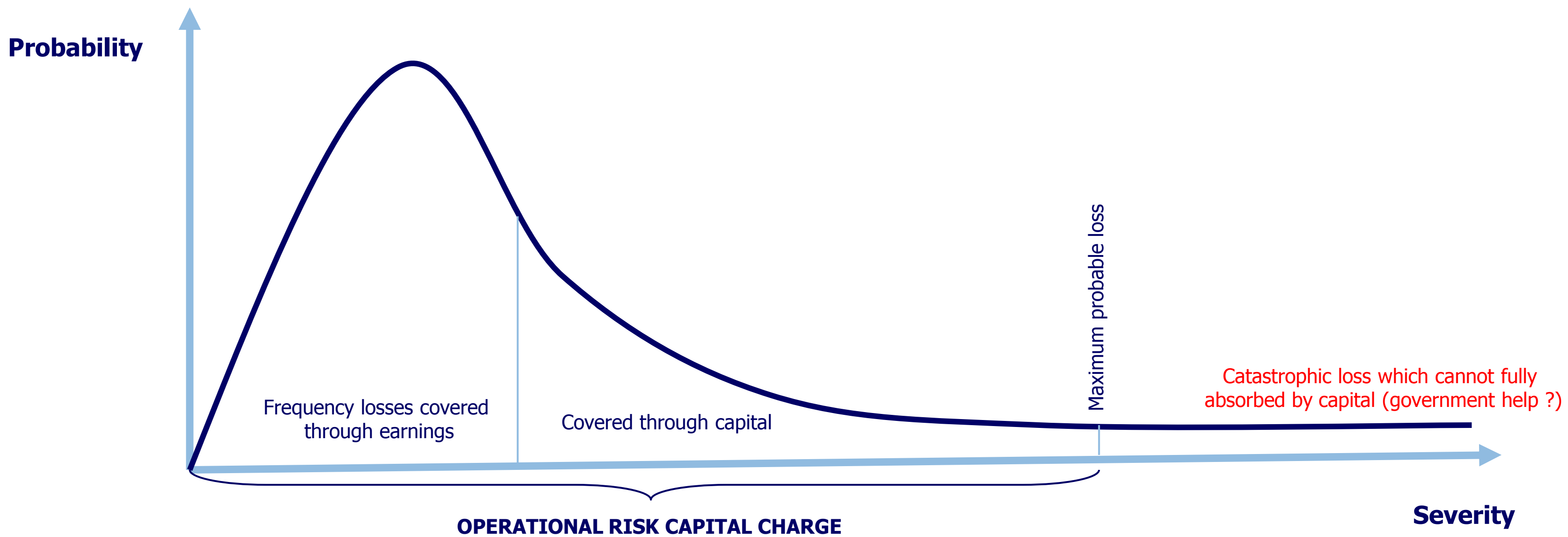
<table>
<tr><th>Basisindikatoransatz
(BIA)</th><th>Standardansatz
(STA)</th><th>Advanced Measurement
Approach (AMA)</th></tr>
<tr><td colspan="2">• Pauschale, undifferenzierte Messung operationeller Risiken
• Unterstellung eines Kausalzusammenhangs zwischen bilanziellen Kennzahlen und der realisierten Schadenshöhe, der empirisch nicht nachzuweisen ist</td><td>• Möglichkeit, eigene Ansätze zur Messung durch die Bankenaufsicht anerkennen zu lassen
• Individuelle Modellierung verspricht Reduktion der Eigenkapitalunterlegung</td></tr>
<tr><td>Eigenkapitalbedarf:

15% (Alpha-Faktor) des Bruttoertrages</td><td>• Geschäftsfelder der Bank werden vorgegebenen Standardgeschäftsfeldern zugeordnet
• Pro Standardgeschäftsfeld: Indikator (Bruttoertrag, Ausleihungsvolumen) X Beta-Faktor

Business Line — β-Faktor
(1) Corporate Finance — 18%
(2) Trading & Sales — 18%
(3) Retail Banking — 12%
(4) Commercial Banking — 15%
(5) Payment & Settlement — 18%
(6) Agency Services — 15%
(7) Asset Management — 12%
(8) Retail Brokerage — 12%</td><td>• Historische Verlustdaten sind den Geschäftsfeldern und Ereigniskategorien zuzuordnen
• Solidität des Verfahrens muss vergleichbar sein mit IRB-Ansatz für das Kreditrisiko (d. h. einjährige Halteperiode und 99,9 %-Konfidenzintervall)</td></tr>
</table>

- The AMA-approach provides senior management with more transparency over the dynamics of their operational risks allowing the integration of the information within the overall risk management framework. In addition it bears the opportunity for lower capital charge.
- **The highest benefit however can be achieved when quantified operational risks information will be integrated within an overall risk management strategy and monitoring activities**

Operational Risk Management Strategies through optimization of probability and economic impact



Strategic Options

- Internal Controls / IKS / SOX
- Process Re-engineering - optimizing processes and process links throughout the organization
- Outsourcing
- Business Continuity Management
- Risk Transfer – Insurance - Captive

Impact on probability and severity

- both
- both – as well as additional savings respectively earnings potential
- Both – however more on probability as the reputational risk and specific operational risks remains with the company
- Severity – in particular reputational risks
- Both – flexible as to the impact on severity and probability

Operational Risk Management – Insurance Risk Management – a silo approach ?

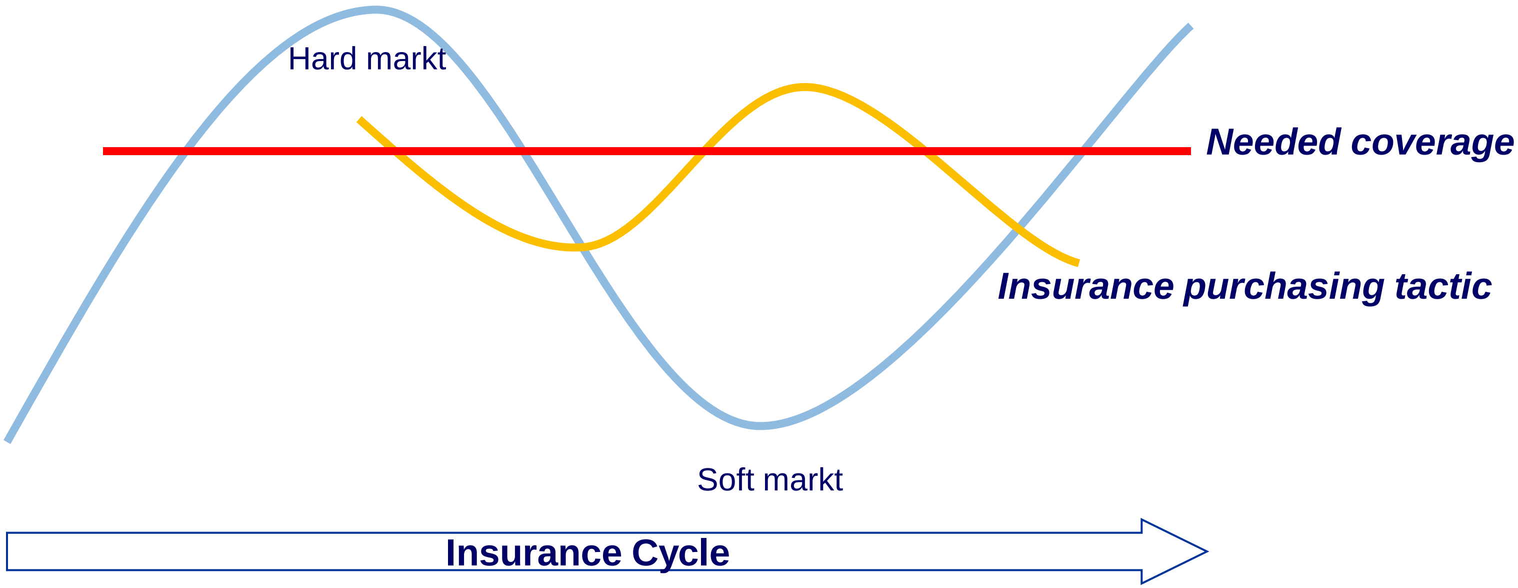
- If operational risk management and insurance management is operating in a silo it fosters the risk of inadequate insurance protection (over- or underinsurance) and therefore a too high level of total cost of risk.

- An adequate operational risk management frameworks which includes the quantification of the operational exposures is a fundamental base-line for an effective insurance management activity which is able to take advantage of the full range of insurance options (e.g. captive). Insurance creates its highest benefit if the insurance premium to be paid is lower than than the capital costs of bound capital (operational capital charge)

- The new regulatory framework Solvency II within the insurance industry will tend to higher insurance premiums for companies without adequate operational risk management frameworks. It can also be expected that expanded due-diligence activities from insurers as part of their underwriting process will benefit companies which can demonstrate a solid operational risk management framework.

Necessity to measure and evaluate the impact of various risk transfer strategies to understand the cost-benefit – added value of the option (coverages, deductibles, limits, captives etc.)

Insurance buying behaviour



<u>The two basic insurance purchasing tactics</u>

- **In a hard market:** Buy as much as you can afford
- **In a soft market:** Buy as much as you can

Buy as much as you know is needed based on expected loss scenarios and in accordance with your risk appetite

What is the savings potential for a bank through more effective and integrated insurance purchasing

Coverages	Self-retention	Losses
• D&O • Property • EPLI • Crime • Computer Crime • BPL/E&O	Nil 1 mio. 3 mio. 1 mio. 0.5 1 mio.	?

Cost of retained losses within the self retention level

Loss scenarios	Most likely	Worst case
Development of loss scenario covered by insurance	Impact and probability	Impact and probability

Cost of not purchasing insurance at all

<u>Challenge the efficiency of insurance risk transfer solutions</u>

Comparison of the bank's cost of retaining the total operational risk versus purchasing insurance risk transfer

Which insurance program structure achieves the highest efficiency

Additional considerations

The development of insurable operational risk scenarios

- enhances the contract certainty in case of a operational risk loss
- sets the foundation for the expansion / enhancement of coverage

Developed scenarios are considered an integral part of the insurance contract

Bank

Covered operational risk scenarios	Assessment of bank **Impact** (high, medium, low) **Probability** (high, medium, low)

Insurance Carrier

Covered operational risk scenarios	Assessment of bank **Impact** (high, medium, low) **Probability** (high, medium, low)

Where are the potentials for operational risk optimization

Impact of insurance

Operational risk transfer across financial sectors – Bank for International Settlements

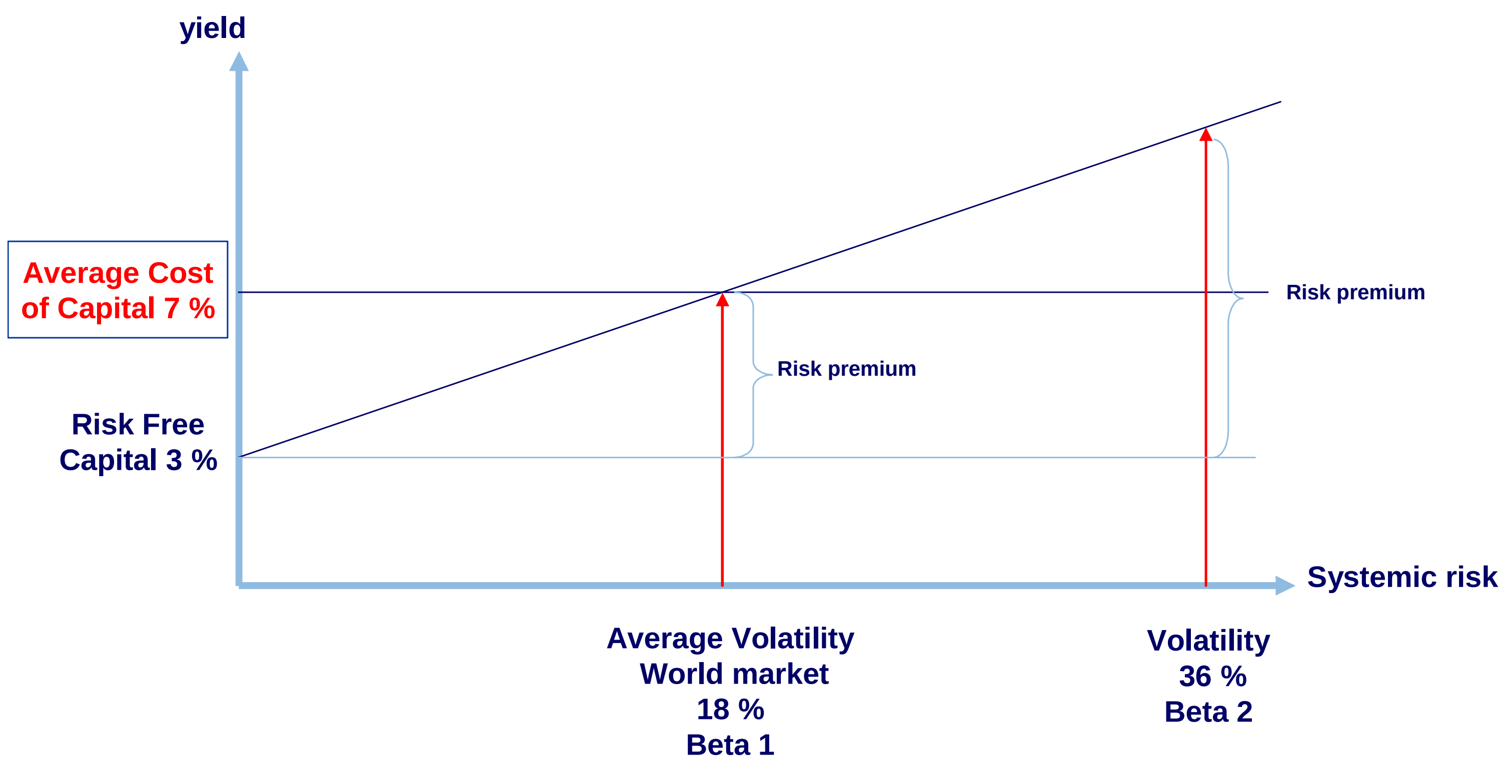
Operational risk even type to be covered by insurance	Original Risk Exposure	Insurance Coverage	Haircut	Adjusted Insurance Coverage	Net Risk Exposure
Fraud, Employment Practise Damage to property etc. **Additional risk events**	2’000’000	1’500’000	50 %	750’000	1’250’000
Total	24’000’000	14’000’000		9’100’000	14’900’00

Total original risk exposure X probability
= total of capital charge for operational risk
X 7 % cost of capital
= Cost of retaining the exposure by the company

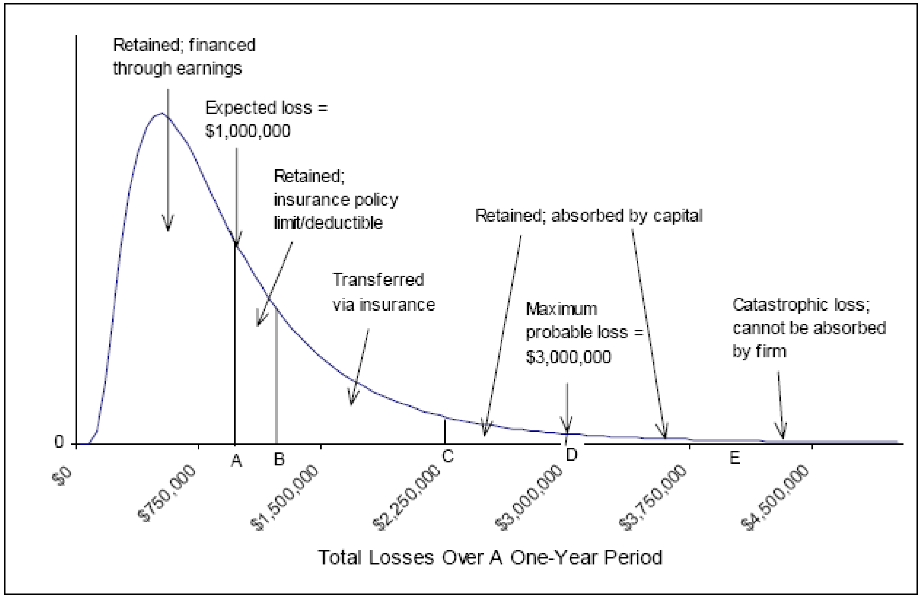
Net Risk Exposure X probability
= total of capital charge for operational risk
X 7 % cost of capital
+ cost and profit margin
= Premium charged by the insurance company

Capital Asset Pricing Model (CAPM)

- Average cost of capital is assumed to be 7 %
- Based on the CAPM-Model insurance coverages add more economic benefit the higher the Beta-factor since the risk premium over the cost of capital is higher but the higher Beta-factor does not correlate with the level of operational risks within an organization



Transferring operational risk



Effectiveness of risk transfer

- Counterparty Credit Risk
- Liquidity Risk
- Legal Risk (clear insurance policy wordings)
- Duration of coverage
- Cancelability

Operational risk transfer across financial sectors – Bank for International Settlements

The discount on the total operational risk capital charge

- Banks already transfer operational risk through insurance and other vehicles, but the new Accord could create incentives for greater operational risk transfer, even if doubts cast on the effectiveness of such transfers have led the Basel Committee to cap the maximum discount amount at 20% of total operational risk capital charge.

Have banks established transparency and understanding over the effectiveness of insurance coverages in view of their operational risk quantification and determination of operational risk capital charge activities ?

Why do banks not take advantage to save operational risk capital charge?

Marketing approach

Enterprise Risk Management
for small and medium sized corporates (KMU)

Rent a Risk Manager
- Independent
- Access to modeling capabilities
- Cost effective with optimal intellectual capital exchange

Services
- Strategic Risk Assessment
- Insurance Optimization
- Project Risk Management

Integrated Insurance Purchasing
for banks

Operational Risk Insurance
- Independent – no bias towards insurance carriers or brokers
- Established basis for process re-engineering

Services
- LDA approach with input from internal expert
- Insurance Optimization
- Reduction of Operational Risk Capital Charge

Operational Risk Securitization
Investment Banks

OREEB
- Development discussions
- Evaluation of marketability of OREEB

Annex

SEC: New Disclosure about Company Leadership Structure and the Board's Role in the Risk Management Process

July 2009

- Disclosure requirement of the company's leadership structure and why the company believes it is the best structure for it at the time of the filing.
  - Under the proposed amendments, companies also would be required to disclose whether and why they have chosen to combine or separate the principal executive officer and board chair positions.
  - In making voting and investment decisions, investors should be provided with meaningful information about the corporate governance practices of companies.
- Disclosure requirement on the board's involvement in the risk management process.
  - Does the board implement and manage its risk management function, through the board as a whole or through a committee, such as the audit committee?
  - Disclose in depth on how the organizations identify risk, set risk tolerances, and manage risk/reward tradeoffs and monitor risks throughout the enterprise. Boards will also be held accountable by the SEC to review and express opinions on their involvement in the Enterprise Risk Management process.
  - Similar to disclosure about the leadership structure of a board, this disclosure should provide important information to investors about how a company perceives the role of its board and the relationship between the board and senior management in managing and monitoring the material risks facing the company.

Setting compensation for risk-reward trade-offs means embedding enterprise risk management within business units to the process level where employees are given incentives to make decisions.

Earlier solutions

FIORI (Financial Instituions Operational Risk Insurance) Swiss Re

- Five Risk Classes
  - **Personal:** The risk that business performance is adversely affected by improper personal policies, motivational issues, or internal fraud
  - **Technology:** The risk of loss resulting from systems unavailability, poor data quality, system errors, or software problems
  - **Physical Assets:** The risk of damage or loss of physical assets that negatively impact operations
  - **Relationships:** The risk of loss resulting from relationship issues such as sales practices, customer problems, and unsuitable rare relationships
  - **External:** The risk of a loss from external fraud

- Large Limits
- Broad coverage
- Multi-year programs
- Timely insurance settlements (within 7 days)

Earlier solutions

Operational Risk Insurance and Securitization for Banks / Insuring Extreme Loss Events Deloitte (2008)

- Insurers provide insurance policies covering very large operational risk loss events.
- The insurance policy is securitized through a bond asset and sold onto the capital market in an Operational Risk Extreme Event Bond (OREEB)
- By holding the insurance policy, banks not only insure themselves against the severe consequences of such events, they also enjoy a large reduction in regulatory capital costs and net savings of tens of millions per year after the cost of the insurance policy.
- The OREEB offers an investment opportunity which is fully uncorrelated with the market and other assets.