



SOCIETY OF ACTUARIES

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# Risk Management of a Financial Conglomerate

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## 1. A NECESSITY

The emergence of large European financial groups has been one of the principal features of the latest banking and insurance consolidation wave. Financial deregulation, globalization of financial markets and increased shareholder pressure for financial performance are the main forces that fueled the mergers and acquisitions trend over the past few years. In order to measure, monitor and manage risk and ultimately optimize risk versus return within a conglomerate at both operating entity and aggregate group level, the financial conglomerate needs excellent risk-management processes and internal control mechanisms. This should also be encouraged by the regulatory structures, which are unfortunately still largely focused on individual operating entities within a group and treat each of these as independent silos in setting capital requirements. This silo approach fails to deal adequately with aggregate risks across different regulated businesses.

Accurate and consistent risk measurement is a prerequisite for good risk management. Risk measurement typically starts bottom-up in the different businesses within a financial conglomerate. As a result, many different approaches to risk measurement have been developed between insurance and banking businesses and even within each of these areas (e.g., life and non-life insurance). For a financial group, especially a conglomerate covering many business areas, arriving at a common risk measure is quite a challenge.

Externally too, the growing emergence of financial conglomerates and the blurring of distinctions between the activities of firms in each financial sector had also increased the need for joint efforts to improve the efficacy of supervisory methods and approaches. Basel II has focused on improving consistency and accuracy of setting solvency requirements across banking businesses and now Solvency II will aim to do the same for insurance. A key aim of the regulatory bodies is also to develop a

consistent view on risk measurement across the entire financial services industry. The Joint Forum (formerly known as the Joint Forum on Financial Conglomerates) has been a focal point of the efforts of the international supervisory community in meeting this need.

The concept of “Economic Capital,” which measures risk based on a company’s own unique risk profile, is developing as the common measure of risk, sought by many financial conglomerates as well as regulatory bodies. Economic capital enables financial institutions to establish a capital framework that allows for consistent translation of risk taking into capital requirement, making “apples-to-apples” comparisons possible. An economic capital framework does not only allow for the capture of netting and diversification effects within a financial conglomerate, it also addresses many of the current limitations of regulatory capital models (e.g., silo view, standardized risk modeling approaches).

## 2. THE INTERNAL CHALLENGE: SIX STEPS

The development of comparable measures of capital and value is not an easy task. Fortis, as a bancassurance group facing a wide range of risks, has applied the following six-step approach:

- Define and communicate your risk taxonomy
- Make sure banking and insurance officers understand each other
- Define the models to be used for each risk type (business, event, credit, etc.) in a consistent way
- Model each risk and aggregate to arrive at an overall capital figure
- Define a regulatory solvency corridor
- Look at the risk/return “Framework”



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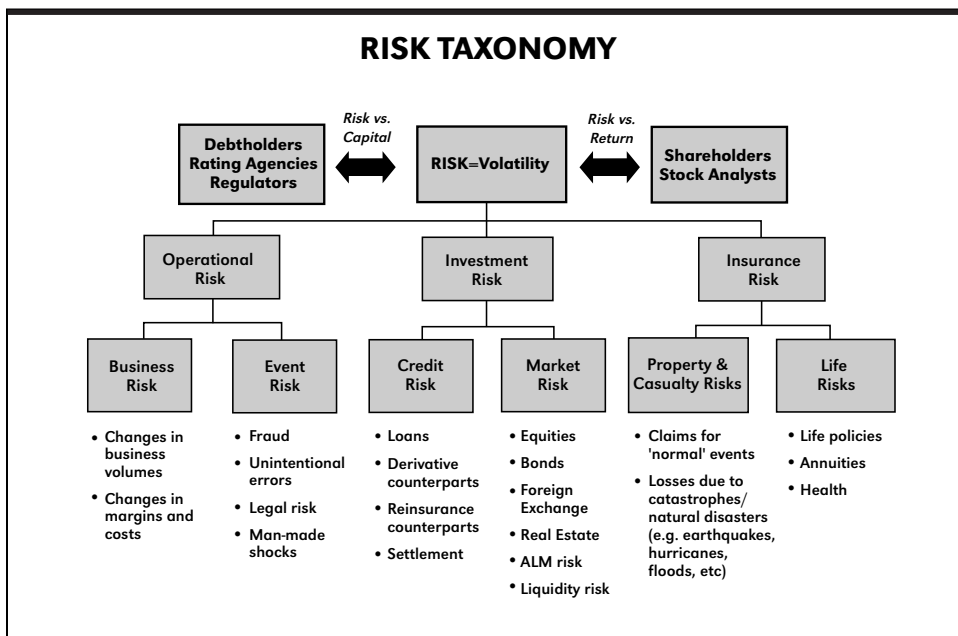
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### Step 1: Define and communicate your risk taxonomy

Many different ways of classifying risk are possible, and no single taxonomy is inherently better than another. The classification of risk types often follows the relative importance of risk types to a financial services provider. The risk taxonomy used at the level of Fortis Group seeks to establish a common risk language across the group, while ensuring that all risk types are adequately captured. Figure 1 distinguishes six broad types of risks.

Figure 1



#### 1. Investment risk

- **Credit risk:** the risk that a borrower/counterparty will fail to repay the amount owed to the Fortis Group.
- **Market risk:** the potential for loss resulting from unfavorable market movements (from trading to holding positions in financial instruments). Market risk might be treated as one aggregated risk or separately as interest rate, equity, foreign exchange, real estate and commodity risk. Within market risk we identify ALM risk. Fortis Group is exposed to interest rate, share price and real estate risk via its investment portfolio. Credit risk and market risk are measured separately because the distribution for credit risk (low frequency, high sever-

ity correlated loss) differs significantly from the distribution for market risk (high frequency, low severity).

#### 2. Insurance Risk

- **P&C risk:** the variability in future claims and loss-adjusted expenses (LAE) paid (whether in size of claims, number of claims or timing of payments) and the variability in the liabilities for outstanding claims overtime.
- **Life risk:** the risk exclusively associated with a life insurer. The risk is especially the result of deviations in timing and amount of the cashflows due to the (non-) incidence of death.

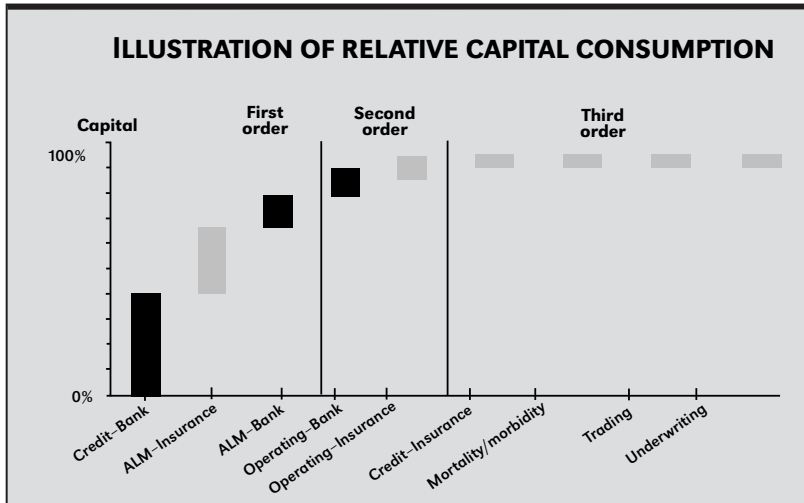
#### 3. Operational Risk

- Business risk refers to the risk due to operating leverage (in particular, volatile revenues and an inflexible expense base).
- Event risk refers to the risk of experiencing one-off adverse non-financial events such as fraud and punitive damages.

Given that a financial conglomerate is by definition a combination of diverse businesses operating under a common ownership structure, each of these has a distinct risk profile. From this point of view, an ordering of risks in function of the consumption of economic capital is required, taking into account the fact that a conglomerate must not be overcapitalized to the point where it would cause undue harm to shareholders or undercapitalized to the point where it would cause undue risk of insolvency to debtors and policyholders. In other words, lower capital for a given degree of risk taking will make an institution less solvent, but more profitable, and vice versa.

Figure 2 gives an illustrative example of ordering and is therefore not valid for every business within a financial conglomerate because it depends on the relative importance of each of the banking and insurance businesses within the conglomerate. In general, universal banking activities are mainly dominated by credit risk, but this is not the case for life insurance activities. ALM is invariably the largest consumer of capital in insurance companies (especially in life) given that insurance risks diversify away in large portfolios. P&C activities are mainly dominated by insurance risk while the non-licensed subsidiary encounters operating risk. Insurance risks (mortality and underwriting)

Figure 2



will diversify away substantially in large portfolios because they are not correlated with the other (financial) risks and because a lot of the volatility is already reserved in the provisions.

**Step 2: Make sure banking and insurance officers understand each other**

Step 2 consists of improving the understanding by bankers and actuaries of mutual approaches and terminology. Figure 3 summarizes the typical banking and insurance approaches. The dissimilarities are substantial, mainly because of the differences in the dominant risk types that have traditionally been faced. Furthermore, banks tend to have assets that are difficult to value, whereas insurance companies have uncertain liabilities. Both also use very different valuation principles. Thus, in order to make sure that banking and insurance understand each other, knowledge sharing and communication efforts should be an important issue in a financial conglomerate.

**Step 3: Define the models to be used for each risk type (business, event, credit, etc.) in a consistent way**

Step 3 defines the models to be used for each risk type in a consistent way. Those risk types are credit, market, ALM, life, P&C, business and event risk. A common risk measurement framework is the prerequisite to an effective measurement and management of risk and used capital. To construct a common risk language across the whole of a fi-

ancial conglomerate, differences in the sector-specific frameworks should be identified and, agreement should be reached consistently covering all relevant risks. For example, one of the key challenges in a conglomerate is specifying a uniform time horizon.

In banks, the convention for modeling risks and assessing capital is to adopt a one-year horizon. Alternatively, insurance companies are typically capitalized for longer decision horizons. In order to have a “common currency” for risk, a com-

Figure 3

DIFFERENT APPROACHES USED IN BANKING AND INSURANCE		
	Banking	Insurance
<b>Terminology</b>	<ul style="list-style-type: none"> <li>Expected loss</li> <li>Rating masterscale</li> <li>VAR</li> <li>RARORAC</li> </ul>	<ul style="list-style-type: none"> <li>Claims</li> <li>Mortality tables</li> <li>Fair Value</li> <li>Embedded Value/Risk Based Capital</li> </ul>
<b>Focus</b>	<ul style="list-style-type: none"> <li>Risk</li> <li>One-year</li> </ul>	<ul style="list-style-type: none"> <li>Expected outcome</li> <li>Multiyear</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>Insufficient use of statistics</li> <li>Customer behavior</li> </ul>	<ul style="list-style-type: none"> <li>Insufficient use of modern finance theory (in some countries)</li> <li>Little use of transfer pricing (ALM)</li> </ul>

mon time horizon needs to be specified, at least at the group level where risk aggregation across banking and insurance takes place. Another example is the translation of the one-tailed 99 percent confidence interval for trading risk or 95 percent confidence interval for specific actuarial risk into a 99.97 percent confidence level, which is applied to be in line with the Fortis “AA” calibration.

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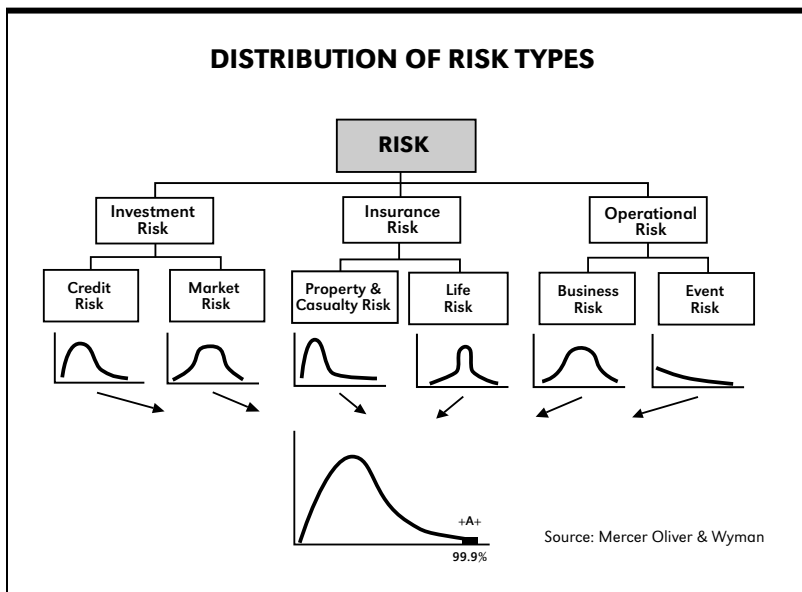
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### Step 4: Model each risk and aggregate to arrive at an overall capital figure

Step 4 defines the model for each risk in terms of the amount of value they put at risk to a certain confidence limit determined by the target debt rating. For

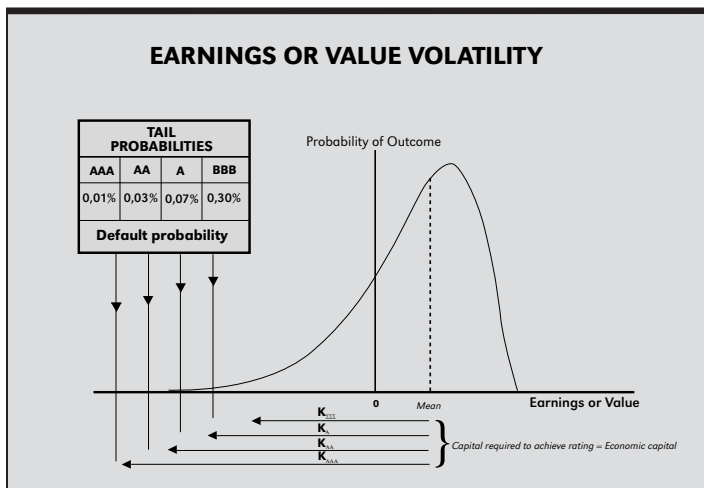
Figure 4



Fortis, therefore, economic capital is defined as the amount of value at risk to a 99.97 percent confidence limit (based on a AA target debt rating). It is calculated by estimating the fair value now and comparing it

with the fair value in one year's time under a 99.97 percent worst-case scenario for each risk. One should be aware that it is not that easy to determine the distribution of a risk type because, among other things, a great deal of data is needed. Figure 4 illustrates that a different risk distribution is possible for every risk type.

Figure 5



Within Fortis, the stand-alone capital requirements for each of several risk types quantify the value at risk for each risk type up to an AA confidence level over a one-year period. The economic capital (after having quantified the level of risk) to achieve such a particular level of solvency (e.g., AA rating—

99.97 percent) can be derived from the tail of the probability distribution. The distribution illustrated in Figure 5 represents the probabilities of various earnings outcomes from a loan portfolio over a one-year time horizon against which capital must be held in accordance with the desired rating.

The process to determine how much capital is required in a financial conglomerate can be presented schematically as in Figure 6 (see next page).

Clearly, the probability that the sum of all stand-alone capital requirements fails to cover losses for all risk types simultaneously is lower than the probability that only one or a few capital requirements for a risk type fall short of covering losses attributed to the risk type. We are interested in computing an aggregate capital requirement figure for the group that will cover potential group losses up to the desired group confidence level equivalent to an AA-S&P debt rating. We would clearly overestimate group capital requirements if we were to add up all the stand-alone capital requirements, since that would lead us to a much higher confidence level than anticipated.

Instead of adding the stand-alone capital requirements directly, we must aggregate them considering the tendency for co-movement among losses for each of the risk types. If we know to what degree the losses related to a particular risk type tend to follow the losses related to other risk types, we can compute an aggregate capital requirement figure for the group to protect against all losses up to the desired confidence level.

Within these aggregation steps, diversification is taken into account via a set of correlation estimates. Empirically, diversification effects are greatest within a single risk factor (Level 1), decrease at the business level (Level 2) and are smallest across business lines (Level 3). Recent estimates suggest that the incremental diversification benefits achievable at Level III by combining a bank with an insurance company are on the order of a 5-10 percent reduction in capital requirements.

Diversification is a complex issue and it is understandable that regulators are wary of allowing financial companies to take significant

benefit until there is greater convergence on how it should be measured and managed. However, we would argue that there is a very important distinction between netting effects, where the same risk can be shown to impact different parts of a group in equal and opposite ways (e.g., interest rate risk in banking and life insurance pools), as well as general diversification. Netting should therefore be analyzed separately from more general diversification effects and as we believe, should be recognized in terms of the impact it has on solvency requirements.

Once the correct group-wide capital figure has been computed, it must be re-allocated back to risk types and business lines. However, since the group figure will be smaller than the sum of the stand-alone figures, a tailored disaggregation methodology is required.

**Step 5: Define a regulatory solvency corridor**

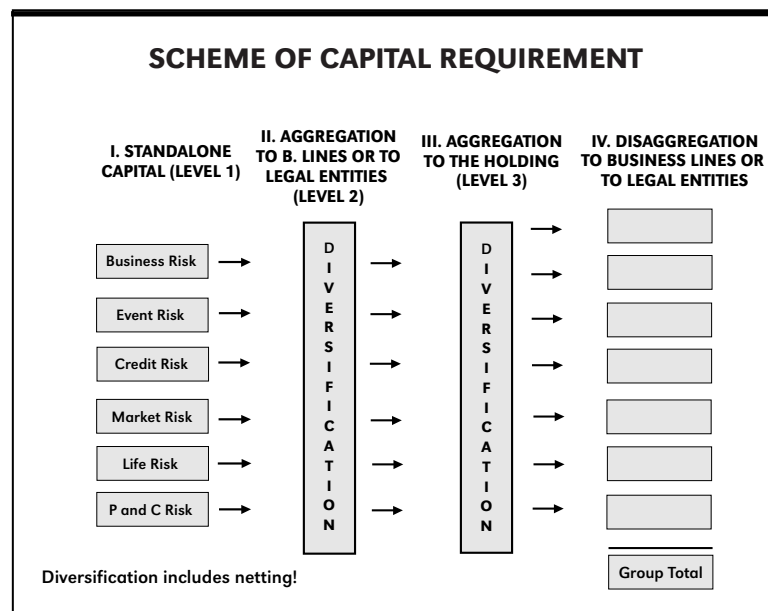
In step 5 the focus is put on the regulatory solvency requirements and the definition of a solvency corridor. Fortis has formulated a framework for regulatory solvency that defines an upper and a lower limit of core capital. The minimum limit is based on the sum of 6 percent of the bank's risk-weighted assets and 1.75 times the statutory minimum requirements for the insurance sector. The upper limit comprises 7 percent of the bank's risk-weighted assets and 2.5 times the statutory minimum requirements for the insurance industry.

We also note, in addition to the regulatory and economic capital we already have discussed, that rating agency requirements can not be ignored. This therefore leads us to consider four views of capital that a financial conglomerate should take into account.

• **Regulatory minimum capital:** the amount of capital to meet the capital adequacy ratio stipulated by the regulators to ensure that banks maintain a certain amount of capital in relation to their assets as a cushion against probable losses. These are currently based on undifferentiated rules of thumb (Basel I, Solvency I) that do not reflect the real economic risks of the business, but Basel II and Solvency II have the intention to change this to a certain extent.

• **Solvency corridor floor:** a minimum level of capital Fortis should have. The floor is created to provide an easily understandable and computable reference point for capital management. It is derived from the regulatory approach and it can encompass bank and insurance issues with specific regulatory and rating constraints. The Fortis floor for banking is computed as 4 percent of RWA \* 150 percent; for European insurance it is total capital required \* 175 percent.

Figure 6



• **Economic capital:** the amount of capital required to cover all the risks faced by a business, analyzed from an economic point of view rather than a regulatory or accounting view. Economic capital is calculated in house using internal data and methodologies. As a result it should be more robust (i.e., reflects the true risks in a more tailored fashion) than any other capital metric.

• **Rating agency driven capital:** the amount of capital that the rating agencies expect in order to feel comfortable about giving a certain rating. Given the rough rules of thumb used by regulators to establish regulatory capital requirements and their lacking differentiation for the qualitative level of capital adequacy, rating agencies have, in some cases (mainly insurance), developed their own capital models. One

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also needs to keep in mind that the rating agencies' decisions on a credit rating are not only based on quantitative considerations or hard factors but also based on qualitative factors, such as risk control and management capabilities.

### Step 6: Look at the risk/return "Framework"

In step 6 we have to look at the risk/return "framework." The accounting view is focused on return-on-assets (ROA) and return-on-equity (ROE). The regulatory view (Basel I, Basel II, Solvency II, etc.) is working with return-on-required-equity (RORE). The risk manager view uses concepts such as risk-adjusted return on capital (RAROC). These metrics measure both the return and the capital required on a risk-adjusted, i.e., economic basis, and hence can be viewed as the economic equivalent of the accounting-based ROE profitability measure.

For the insurance operations the risk-return trade-offs are analyzed in the dynamic ALM models. In such a model one can test different

bonds, "atypical" investments (CDO and other structured products) and dynamic hedging strategies in such a framework. The objective is always to push the efficient frontier to the "Northwest" where you'll get more return with less risk.

Figure 7 is an illustration of an efficient frontier analysis for one particular block of group life business. The context is value-based, where return (Y-axis) is associated with the expected increase in value over one year, and risk (X-axis) is defined as the ALM economic capital of that block of business. ALM economic capital can be seen as a multiplier times the volatility of the changes of fair value over a one-year horizon. The figure below ALM economic capital is expressed as a percentage of the underlying technical provisions. This is to compare the economic capital requirements with those used in rating agency models, by regulatory bodies and risk-based solvency frameworks.

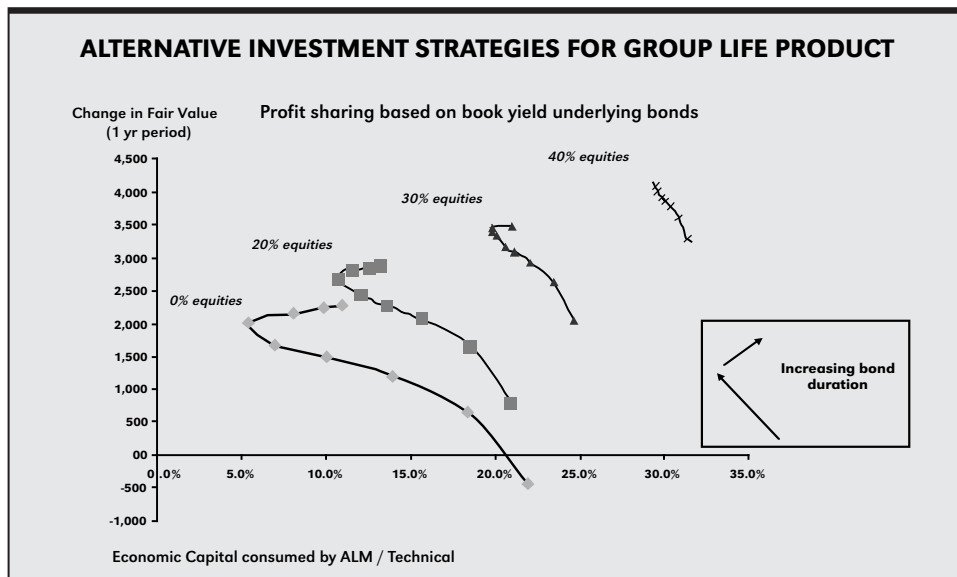
Figure 7 shows, for this particular product group and for a fixed percentage of equities in the asset mix, that by increasing the duration of the fixed income portfolio we move to the Northwest (less risk more expected return) up to a certain duration. From there, increasing the duration leads to more expected return and more risk. If we increase the percentage of equity investments in the asset mix, we generally increase both expected return and risk (move to the Northeast). Internal studies within Fortis show that the shape of the efficient frontiers depends very much on the underlying interest rate position (asset minus liabilities) in the product group. For this group life product the "optimal" amount of equities in the asset mix depends on the risk appetite of the companies selling the product and, in practice, also on the competitive pressures in the local insurance market.

Within Fortis, the application of these different steps to fix the performance measurement is summarized in the two following schemes.

#### For the bank pool:

- Risk adjusted return = revenue - expenses - EL + capital benefit.
- Economic capital is fixed separately for credit, ALM, trading and operational risks.

Figure 7



asset mixes via a comparison of return and risk in both an earnings and a value-based context. The traditional asset classes in such a framework are equities, bonds and real estate. A major challenge is to incorporate corporate

Figure 8

**For the insurance companies:**

- Return = premiums + investment income + release of reserves - claims - expenses + capital benefit.
- Economic capital is fixed separately for credit risk, ALM risk, operational risk, life and non-life.

**3. HOW TO PRIORITIZE THE BUSINESS APPLICATIONS**

Leading banks and insurance companies deploy portfolio management, economic capital and RAROC in a wide variety of applications (see Figure 8).

**“Top-Down” Applications:** the group will monitor risks as they are assessed at the portfolio level.

**1. Reserve and capital adequacy testing**

The financial system has witnessed considerable economic turbulence over the last five years. While these conditions have generally not been focused on G-10 countries directly, the risks that financial conglomerates have had to deal with have become more complex and challenging. Financial institutions should frequently test and monitor reserves and capital adequacy, and within Fortis significant resources are put in place in order to measure capital adequacy from different points of view.

**2. Limit setting**

Counterparty exposure limits are set to constrain the maximum impact of any single default on the capital base of a financial conglomerate. Portfolio risk models allow the calculation of the risk contribution of individual counterparties or subportfolios taking into account the (un)expected losses, correlation effects and thus the economic capital. If risk contributions of certain counterparties are high, senior management could decide to set limits for approval of additional credits to these counterparties. In a financial conglomerate it is important to apply the “one obligor” principle which implies that one global vision of all risks on one obligor throughout all entities (no matter the location) and risk types (no matter the nature of the underlying risk) should be taken into account.

**3. Portfolio optimization: buy/sell/hedge decisions**

The portfolio managers can optimize the portfolio by using buy, sell or hedge strategies by

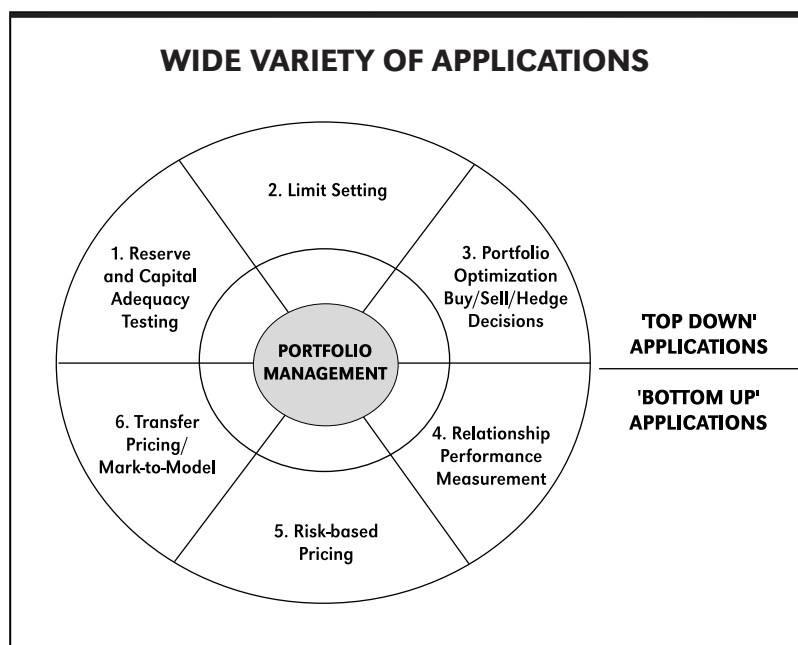
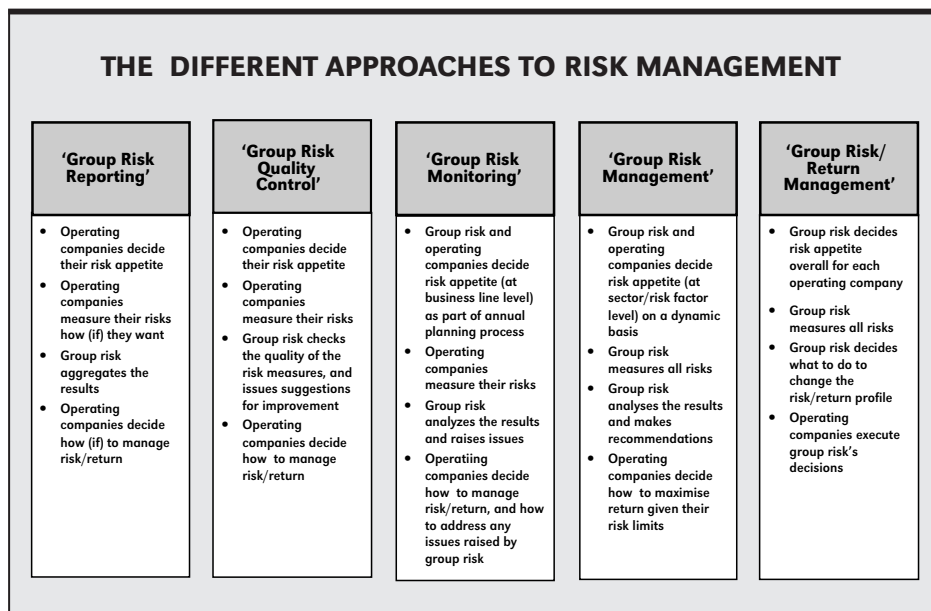


Figure 9



means of secondary loan market, syndicated lending, credit derivatives and asset-backed securities such as CLOs (collateralized loan obligations).

**“Bottom-Up” Applications:** local businesses develop and recommend methodologies of risks as they are assessed at the individual asset level.

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### 4. Relationship performance measurement

Financial institutions have to adapt their organization and their incentive systems in order to be successful in the future. Management must have the incentive to use risk information to support better decision making. The performance of the relationship of a client or relationship manager should not solely be evaluated on revenue and revenue growth rates. The recognition of capital utilization and return on capital are also important.

### 5. Risk-Based Pricing

Rarely do prices consistently reflect risk. Risk measurement techniques, in credits for example, can be applied to analyze and price transactions against the expected loss and required economic capital. On the one hand, the narrowing profitability of traditional credit products implies little room for error either in selecting or in pricing individual transactions. On the other hand, the relative attractiveness of other less traditional but higher margin credit businesses, such as project or trade finance can only be evaluated by taking into account not only their margins but also their potential impact on the risk of the portfolio. Although the use of internal credit rating models to support the pricing and classification on a masterscale is a step in the right direction, it is not sufficient. It is also important to look at a portfolio level because diversification and timing effects increasingly lead to the difference between profit and loss.

### 6. Transfer Pricing

Transfer pricing, or the price at which one unit of a firm sells goods or services to another unit of the same firm, should truly reflect arm's-length prices or the prices at which a willing buyer and a willing unrelated seller would freely agree to transact. Banks, for example, use risk management tools to transfer banking book exposures to the trading book where possible in order to hedge interest rate risks internally. For insurance companies, basically a comparable approach is used via replicating portfolios. Unlike banks, life insurance company liabilities are intertwined with assets, but this should not prevent the company from tracking the performance of assets and liabilities.

Strategic decisions concerning the relative balance between corporate and retail banking activities can achieve long-term structural shifts in interest rate risk exposures as well. However, there are limits on how many banking book exposures can be transferred to the trading book. When interest rate risk is transferred to the trading book, usually through transactions that resemble money market transactions, internal transfer pricing mechanisms are used to determine the amount of risk that has shifted between books. These pricing mechanisms are highly institution-specific. In addition, these mechanisms do not transfer embedded options and basis risk.

## 4. FORTIS RISK MANAGEMENT STRUCTURE

In order to organize an adequate risk management structure, the link between central risk management and local risk management (within operating companies) should be clearly defined. From this point of view, the following question arises: Who is in the driver's seat in the measurement and management of the risks and returns of each of the activities at a stand-alone and aggregated level?

Although the answer to this question will be partly influenced by the corporate governance of Fortis, there are two basic principles that will always hold:

1) Whether you are at the helm of a bancassurance group or a financial holding (with stakes in banks, life or P&C insurance companies), you must rely on an integrated risk-management framework throughout the whole organization (consistent risk-measurement techniques, consistent policies: What is my real profile? What is the impact of my asset mix on my risk-return? How do I monitor and control risk?)

2) The legal structure may evolve over time (from one bank and many insurance companies to one bank and one insurance holding or even to one company). It does not matter from a risk point of view because we have based our risk organization structure on the principle of "Russian dolls" (from the bottom to the top: business risk committees; central risk committee(s) for the bank and the insurance(s); the Fortis Risk Committee at group level).

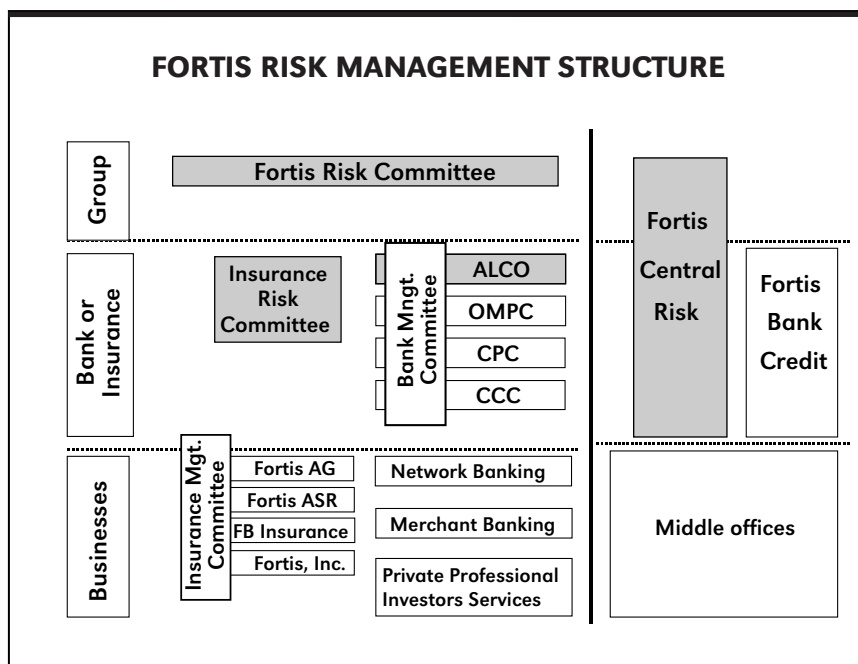
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It is clear that the definition of regulatory capital differs greatly between banking and insurance environments.  
”

Although we advocate an integrated risk structure, it is up to the financial conglomerates to choose between a centralized or decentralized approach. In Figure 9 we describe the different approaches on how you could organize your structure. Fortis is currently applying the “Group Risk Management” approach.

Figure 10 summarizes the Fortis Group approach in more detail. The risk organizational framework was created to ensure coherent decision making between the business and group level. Over time, Fortis’ banking and insurance operations have developed risk-management practices, which support local and tactical decision making. The group objective, however, is to build group-wide harmonized risk-reporting and risk-management structures, which not only integrate practices existing at the individual banking and insurance level, but also upgrade the overall approach to include state-of-the-art quantitative risk-management techniques. At the group level, a central risk-management function has been created, reporting directly to Fortis’ CFO. At the business level, each business is responsible for managing its risks and ensuring that it has in place excellent risk management covering the full risk taxonomy. This includes acting within the risk policies, guidelines and limits, proactively identifying, monitoring and managing all of its risks, holding sufficient reserves to cover liabilities, etc. All these activities are under the overall coordination of Fortis Central Risk Management, which:

- helps to ensure the group has and can demonstrate that it has consistently high standards of risk management;
- encourages risk/return optimization;
- supports the work of the bank and the insurance risk committees and coordinates the implementation of risk initiatives;
- provides support to the businesses on risk-related issues;
- measures economic capital group-wide;
- validates the risk models developed by the businesses and by the bank’s credit department;
- coordinates risk communication with regulators, rating agencies, etc., with the exception of credit risk in the bank, which is communicated through central credit management;
- measures and monitors the ALM risk in a consistent way, across bank and insurance.

Figure 10



### 5. BANKING AND INSURANCE CAPITAL: HIGHLIGHTING SOME DIFFERENCES

The purpose of an economic capital/solvency project is to arrive at the capital requirements of the group based on the risks taken. This basic principle is not easy to implement, taking into account the different definitions of capital (as mentioned above).

Figure 11 shows the fundamental differences on five crucial items between banks and insurance companies.

Following are two examples that show the impact of some of the previous items:

**Example 1:** the capital requirements for "A" rated credit risk

- Banking regulation (Basel I) 8 percent (minimum 4 percent must be Tier 1).
- U.S. insurance P&C (NAIC RBC): 0.3 – 1.0 percent for investment grade credit.
- EU life insurance: no explicit focus on credit risk.

It is clear that the definition of regulatory capital differs greatly between banking and insurance environments. One step in the right direction consists of the more risk-sensitive re-

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quirements set by the New Basel Accord. This trend can also be observed in the insurance industry (see Solvency II). These trends will most likely bring regulatory requirements much closer to economic capital.

**Example 2:** Another example of a regulatory mismatch is found in the area of financial guarantees and their counterpart in the insurance world—credit insurance. Certain types of guarantees are treated as insurance business if written by insurance but as banking business if

Figure 11

**A GAP BETWEEN BANKS AND INSURANCE COMPANIES**

	<b>Basel 2 Requirements for Banks</b>	<b>Statutory Reserves for Insurance Companies</b>	<b>Economic Capital Consumed by a Bancassurer</b>
<b>Confidence interval</b>	A? / BBB ?	None	Shareholder's decision
<b>Base Line</b>	Statutory solvency	Statutory solvency	Economic solvency
<b>Valuation</b>	Statutory	Statutory	Fair value
<b>Risk type coverage</b>	Excludes Business risk as well as most of the ALM risk (the Banking Book)	Excludes Event Risk	All risk types
<b>Diversification</b>	?*	?**	Yes

\* Market risks are highly correlated with credit risk. It is not the case however for operational risk.

\*\* The existing European insurance capital requirements assume some "average" level of correlation within one licensed entity. In case several such entities form part of an insurance group, any additional diversifications (e.g. geographic diversification) are ignored.

written by banks, yet the capital needed to support the business is radically different depending on which environment is chosen. For a bank, the same capital has to be held to support a guarantee as would have to be held to support a loan of the maximum amount guaranteed. In an insurance context, we look at an actuarial assessment of the amount likely to be paid out. What we can be sure of is that, unlike in the case of banks, the amount reserved will almost always be less than the worst case.

These examples illustrate how differences in the current regulatory framework for banking and insurance can lead to different capital re-

quirements. In order to bridge the gap between banking and insurance, additional efforts will have to be made. We describe this in more detail in the next chapter.

## 6. ECONOMIC CAPITAL, COOPERATION BETWEEN REGULATORS AND THE NEW ROLE OF THE ACTUARIAL PROFESSION

As noted earlier in this paper, there is a trend toward more risk-based measures and many major financial conglomerates are already adapting economic capital as the consistent measure of risk within the institution. Designed as a management tool, economic capital, in our view, more closely reflects the real risks of the business in terms of asset/liability management. Although developed on the banking side, economic capital has more recently been extended to insurance activities.

The reorganization of the supervisors is another development that could help fill the gap. Further consolidation of financial entities made policymakers realize that more coordination of regulation and supervision was necessary.

In addition to this, the actuarial profession must also be transformed in order to meet the new needs. As Bob Partridge, a managing director in Standard & Poor's New York office, states, "Everyone's paying much more attention to accounting and corporate governance issues these days, but the forgotten issue is the actuaries." Traditionally, actuaries focused on technical insurance risks such as mortality, disability, P&C claims risks, etc. Actuaries, who focus on adequacy of reserves, should also be involved in the whole risk taxonomy and the portfolio management of assets and liabilities. This implies that an integration of ALM and the actuarial department is a necessity. Of course this has consequences for the academic actuarial curriculum—transition to a curriculum of all-round financial risk manager, which implies the integration of actuarial science, mathematical finance, econometrics of financial markets, etc.

## 7. CONCLUSION

There is a need for a more rational and adequate framework for responding in an appropriate manner to the issues and opportunities raised by the convergence of the banking and insurance mod-

els. Within this framework, the actuary will play a crucial role together with other risk managers.

It is only in this spirit of cooperation and mutual willingness to learn from each other that we will reap the full benefits of convergence. Both Basel II and Solvency II are important steps towards that objective—the uniform economic solvency framework. There are many issues still to be resolved. To solve these, we believe that there is a need for a well-structured international platform allowing for an open dialogue between the industry (banking and insurance) and the regulator (e.g., joint forum).

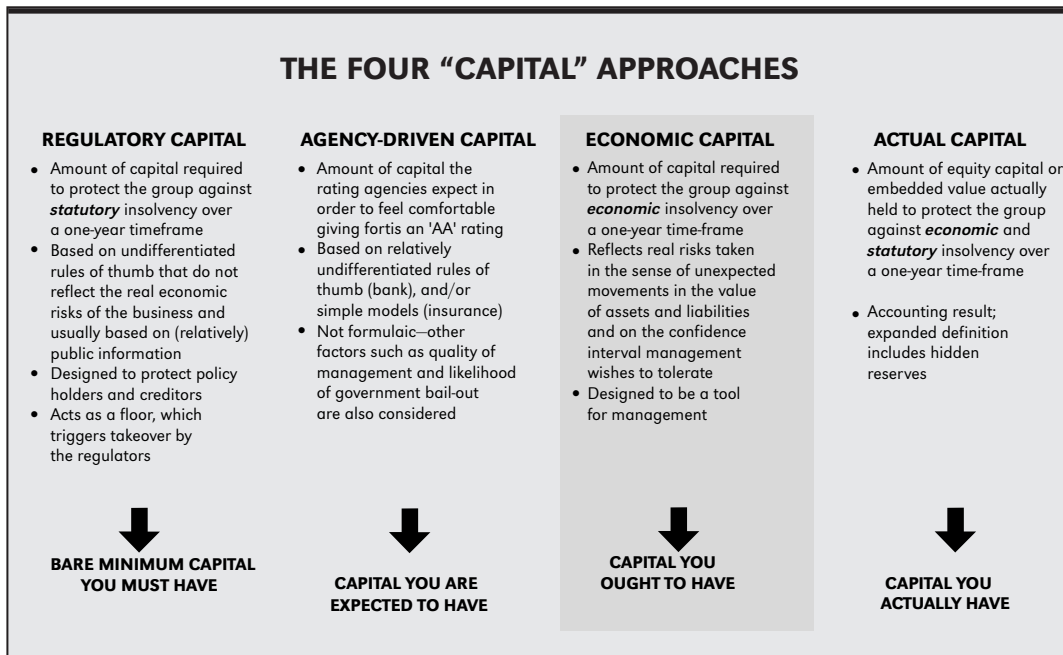
It is also important that regulators and rating agencies encourage and support banking and insurance companies to measure solvency requirements based on economic capital (no fixed rules of thumb).

## 8. APPENDIX

See chart on right.

## 9. REFERENCES

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