Solvency II: a new framework for prudential regulation of insurance in the EU

A discussion paper

February 2006

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Executive Summary

Solvency II is the EU's project to reform prudential regulation of insurance, providing a safety net for policyholders and supporting market stability. To meet Member States' commitment to economic reform in Europe, Solvency II must take into account the insurance sector's vital economic functions of risk management and capital allocation, and the challenges EU companies are facing in the global economy.

The global economy is undergoing a radical transformation with far-reaching changes in the pattern of economic activity posing challenges and opportunities for the EU and all advanced economies. To respond successfully the EU will need a financial services sector which can increase the flexibility and dynamism of the wider economy. Solvency II can contribute by creating a level playing field in prudential requirements for insurers, fostering a deeper single market in insurance services, with benefits for users as well as providers, and more efficient allocation of capital.

The foundations of the current EU solvency regime were laid in the 1970s; since then the landscape surrounding solvency, including the insurance sector itself, financial markets, the approach to prudential regulation, techniques for risk management and accounting standards has changed dramatically. The current EU regime has been left behind and among the most important consequences is a dislocation between regulatory capital and insurers' own assessment of the capital they need given the nature of their business.

There is a strong economic rationale for a reformed EU-wide solvency framework which is forward-looking in its assessment of risk and brings regulatory capital into line with economic capital. However, Solvency II cannot just be about capital requirements; no amount of capital can substitute for the capacity to understand, measure and manage risk and no formula or model can capture every aspect of the risks an insurer faces. The new framework should promote higher quality risk management, working with the grain of industry developments, and ensure that the assessment of regulatory capital is integrated with firms' wider capital management processes.

Some elements of good risk management are qualitative and require the supervisor to make an informed judgement and exercise constrained discretion. Solvency II should provide for this, allowing adjustment to capital requirements where this is justified. This is one aspect of the greater flexibility which is required of the regulatory framework in order to foster the international competitiveness of the insurance sector, ensuring it can respond to rapidly changing consumer and business demands and contribute to employment and productivity growth in the EU.

Solvency II is a huge project and challenge for the EU, and, commensurately a great opportunity. Implementation is expected around 2010 and by then the insurance sector will have made further advances in measuring and managing risk and allocating capital. But decisions need to be reached on the key policy issues over the next 18 months. Now is the right time for the industry and other stakeholders to engage in the debate and provide their insights to help the Commission, finance ministries and supervisors build a world-class system of prudential regulation for Europe's insurance companies.

Introduction

1.1 In consultation with Member States the European Commission is drawing up a new directive governing the prudential regulation of life, non-life and reinsurance business (which we refer to as "insurance" in this document). The Commission expects to propose a directive in mid 2007, setting out the key principles of the regulatory framework. This proposed directive will need to be agreed by the Council of Ministers and the European Parliament. The regulatory framework it sets out will be supplemented by more detailed provisions (implementing measures and supervisory co-ordination) drawn up under the Lamfalussy arrangements (see page 18). Currently the new directive is expected to come into force around 2010.

1.2 HM Treasury and the Financial Services Authority (FSA) are strong proponents of these developments and share the views set out in this joint Discussion Paper on the principles which should guide the development of the Solvency II framework. The common objective is to help design and implement a solvency framework which will provide appropriate protection for policyholders in the UK and throughout the EU while helping the Single Market in insurance services function better and improving capital allocation across the EU's financial markets.

1.3 HM Treasury and the FSA have separate roles in the Solvency II project. HM Treasury represents the UK Government in policy discussions on the draft directive and will negotiate the text in the Council of Ministers. The FSA represents the UK in the Committee of European Insurance and Occupational Pension Supervisors (CEIOPS), which provides technical advice to the Commission. Once the Solvency II directive is agreed by the Council of Ministers and the European Parliament, HM Treasury will have responsibility for transposing the new solvency requirements into UK law and the FSA will have responsibility for providing detailed rules and guidance for firms and ensuring compliance with the new solvency regime.

1.4 Policy discussions between the Commission and Member States will intensify during 2006, based on the technical advice provided by CEIOPS. The purpose of this discussion document is to raise the profile of the issues at the heart of Solvency II and generate debate at an early stage. Key questions are identified in discussion boxes at the end of each chapter dealing with the main policy issues raised in Solvency II (Chapters 4 to 7).

1.5 We are asking for responses to this discussion paper by 28 April 2006 although we will continue to be interested in stakeholders' views as Solvency II policy develops. Please e-mail responses to the discussion paper to duncan.mackinnon@hm-treasury.x.gsi.gov.uk or post them to:

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2 The economic context of Solvency II

Summary

The economic function of insurance is to enable households and firms to manage risk. Effective diversification and transfer of risk is the core of value creation in insurance

The EU insurance industry is very diverse and subject to intense international competition in areas such as wholesale insurance and reinsurance whose location is highly sensitive to regulatory burdens

Developments in financial markets and in risk management techniques over the past twenty years have left the current EU solvency regime outdated

Modernising the EU's solvency regime requires recognition of different forms of risk mitigation and diversification benefits or, more broadly, aligning regulatory and economic capital, and incentivising stronger risk management

For some firms Solvency II will bring higher capital requirements than the current EU solvency regime; to avoid excessive regulatory burdens, they must be appropriately calibrated and fully risk-based

2.1 Developing an effective single market is at the core of EU Member States' commitment to economic reform in Europe. The reforms envisaged in Solvency II can contribute by encouraging a more efficient and deeper single market in insurance services, by strengthening the function of insurers as institutional investors and by putting in place a regulatory framework which achieves an appropriate level of protection for policyholders and supports stability in the wider financial system.

2.2 This Chapter sets out the economic context of the reforms envisaged in Solvency II. It covers the relevant aspects of the economics of insurance, the wider trends shaping the industry and the potential impact of the reforms envisaged in Solvency II.

The economic function of insurance

2.3 The insurance industry contributes to economic growth and national prosperity in various ways. At the macro level the industry helps strengthen the efficiency and resilience of the economy by facilitating the transfer of risk. At the micro level it brings benefits in all areas of day-to-day life. Insurance helps individuals minimise the financial impact of unexpected and unwelcome future events and helps them organise their businesses and their lives with greater certainty. For example, given that individuals are risk-averse, they can enjoy the benefits of home ownership only if insurance is available to protect the value of what is usually by far their largest asset. Equally, a huge range of other assets and activities are insured by households through familiar product types such as motor, travel, home contents insurance and by business through professional and product liability insurance, cover for business interruption and many other contingencies.[1]

[1] A more detailed analysis of the economic value of general insurance is provided by Diacon et al. (2005).

Transferring and diversifying risk

2.4 By pooling the premiums and risks of many different policyholders, and ensuring that risks are diversified across different risk types and locations, insurers smooth and spread the financial effects of insured events. In addition insurers transfer risks to other risk-takers, through reinsurance and to capital markets through hedging instruments. Ultimately, insurers' shareholders bear the risks that are not diversified away or transferred, but they are compensated through a return on their investment.

2.5 The insurance industry also provides mechanisms which enable individuals to pool their savings to meet financial objectives such as providing for retirement. Individuals benefit from economies of scale in accessing capital markets, reducing transaction and information costs, thereby improving the trade-off they face between risk and expected return.

2.6 As a result insurance companies are a key link in the investment chain which enables firms to finance investment and savers to smooth income over their lifetime. The operation of the investment chain is critical to the efficient allocation of capital across the economy and therefore to improving productivity and competitiveness. Insurance firms are major institutional investors: in the UK at the end of 2004 insurance firms held £1.2 trillion of assets, approximately equal to the market capitalisation of the FTSE 100[2].

Trends affecting the insurance sector and financial services

2.7 Together the insurance markets in EU Member States are the largest single insurance market in the world.[3] In 2004 total premium income in EU Member States was estimated at €875 billion.[4] The UK insurance market is the largest in Europe and the third largest in the world with £118 billion of premium income in 2004, accounting for 9.1 per cent of worldwide premium income.[5] For the EU as a whole, the split of premium income is 60 per cent from life and 40 per cent from non-life business.[6]

The globalisation of financial services

2.8 The insurance sector is increasingly subject to international competition; for example, in the UK a growing proportion of business is written by foreign companies or subsidiaries of a non-UK parent. In the five years to 2002, their market share has grown by about 50 per cent across life and non-life markets, rising to around 30 per cent of net premium.[7]

2.9 The extent of international integration across different insurance markets provides one example of the diversity within the industry. Increasing integration across EU markets in retail insurance services is a comparatively recent phenomenon and there is considerable scope for further progress. By contrast the wholesale insurance and the reinsurance sector has long operated on a global scale and is highly

[2] The allocation of assets was as follows: 63 per cent was invested in company securities and 21 per cent in public sector securities. The remainder was invested in property, 7 per cent, and cash, 19 per cent (ABI, 2005).

[3] In 2004 life and non-life premium volumes in the EU 25 were slightly greater than in the United States, (Swiss Re, 2005).

[4] CEA (2005).

[5] ABI (2005). The sector employs around 339,000 people in the UK (excluding Lloyds of London and the London Market; ABI, 2005) and accounts for about 1.9 per cent of GDP (IFSL 2004).

[6] There is wide variation across Member States; typically Member States with lower per capita GDP experience higher premium income growth, with life business growing faster than non-life (CEA, 2005).

[7] IFSL (2004).

internationally mobile. The London Market which includes insurance companies, Lloyd's of London, and other specialist providers and brokers is one example.[8]

Regulation of retail and wholesale markets

2.10 Prudential regulation needs to take account of the diverse nature of the insurance industry. The London Market provides a good illustration of this; it is a key centre for international insurance and reinsurance, handling high exposure risks and providing a substantial proportion of cover worldwide in the marine and aviation markets. Because the customers in the London Market are insurers themselves or large companies, the appropriate regulatory balance between policyholder protection and ensuring that cover is available and competitively priced may be very different from retail insurance markets.

2.11 The wider context of globalisation and the financial services sector was discussed in a recent HM Treasury paper. Four key challenges for the sector and policymakers were identified:[9]

- to promote further financial integration to deliver economic growth while ensuring that the risks to financial stability from greater integration are guarded against;
- to ensure that the financial services sector meets the changing needs of the economy, allowing it to cope with global change;
- to ensure that financial service sector meets the changing needs of society; and
- to ensure that financial services sector remains globally competitive.

All four challenges are relevant to Solvency II; the new prudential framework must ensure the global competitiveness of the EU insurance sector and protect policyholders' interests while fostering innovation and growth.

Drivers of change in the insurance sector

2.12 The current directives covering the prudential regulation of insurance date back to the 1970s when insurance markets were typically far less open, competitive and dynamic than they are today. Since then the pace of innovation in financial markets has accelerated dramatically; in the insurance sector, currently the main drivers of change include:

- **increased competition:** insurance companies have expanded beyond their national markets and increased integration of financial services with banks moving into insurance services;
- **developments in financial markets:** developments in financial instruments and increased market integration have enhanced insurance firms' access to deep financial markets and their ability to price financial risks accurately;
- **improvements in risk modelling and management across financial firms:** the development of Value-at-Risk models began the process of increasingly sophisticated modelling of financial risks and a trend towards enterprise-wide risk management;
- **innovation in distribution:** firms are increasingly relying on telephone and the internet to provide services directly to consumers; there is also a trend

[8] Premium income in this market is estimated at £25 billion in 2003, IFSL (2005).

[9] HMT (2005a).

towards joint ventures (increasingly with firms outside the financial services sector) to distribute insurance products;

- **welfare reform:** demographic change and the pressures on public pension systems may lead to increased demand for insurance firms' life and pensions products.[10]

Solvency I: the current regulatory framework

2.13 Although the existing EU prudential regime for insurers was recently amended through the reforms known collectively as Solvency I, the structure of the prudential framework was left intact; Box 1 sets out all the recent changes to the EU legislation governing prudential requirements for insurers. The challenges of market liberalisation and accelerated innovation in financial services together make a powerful case for a modernised prudential framework for EU insurers which properly aligns regulatory with economic capital requirements, improves the tools available to firms and supervisors for managing risk and enhances transparency for policyholders and the capital markets.

Box 1: Recent changes to EU legal framework

The recent changes to the EU legal framework for the prudential regulation of insurance are:

1. Solvency I: two directives amending the solvency margin requirements, one governing each of life and non-life business and providing minor updates to directives dating from 1979 and 1973 respectively;
2. A directive regulating insurance activities carried out through financial conglomerates (in addition to the 1998 Insurance Groups Directive);
3. A directive regulating reinsurance; and
4. A directive setting out requirements for the reorganisation and winding-up of insurance undertakings.

The current directives are available at:

http://europa.eu.int/comm/internal_market/insurance/legis-inforce_en.htm

Solvency I and the case for reform

2.14 A solvency capital requirement may have the following purposes: to reduce the risk that an insurer will be unable to meet claims; to reduce the losses suffered by policyholders in the event that a firm is unable to meet all claims fully; to provide supervisors early warning so that they can intervene promptly if capital falls below the required level; and to promote confidence in the financial stability of the insurance sector.

2.15 The current EU solvency requirements provide a capital buffer which contributes to policyholder protection but they are less effective in meeting the other objectives. In particular early warning for the regulator requires a trigger level of capital which is aligned with the risk that a firm may fail.

[10] Research shows a negative correlation between public pension expenses and life and pensions premium income, Mercer Oliver Wyman, (2004).

Regulatory and economic capital in Solvency I

2.16 Although Solvency I guarantees a degree of policyholder protection, it falls short of delivering an efficient economic outcome by imposing excessive burdens on firms and by contributing to distortions in the market place. There are numerous ways in which the current EU regime causes regulatory capital to diverge from the firm's economic capital requirement:

- the non-life solvency margin is based on the volume of contracts a firm has written, not on the risks inherent in the contracts;
- an undefined level of prudence is required in technical provisions, leading to an arbitrary level of provisioning;
- the benefits of pooling and diversifying risk are only recognised to a very limited extent, and the capital requirement only partially reflects reinsurance and other forms of risk mitigation;
- group companies cannot benefit from the diversification that exists between the risks in their subsidiaries;
- for life insurance business the interaction of technical provisions and the solvency margin can create perverse effects where greater prudence in the technical provisions leads to an increased solvency margin; and
- asset risks are not recognised in the capital requirement; instead quantitative restrictions are imposed which can distort portfolio choices.

2.17 In addition to the divergence of regulatory and economic capital it is widely recognised that Solvency I imposes capital requirements that for many firms are too low to ensure adequate solvency. Further Solvency I does not provide supervisors with the tools to foster higher quality risk management and control which is arguably as important for policyholder protection as the level of solvency itself.

Solvency II's potential economic benefits

2.18 The development of the Solvency II framework should be guided by a set of specific regulatory objectives and by the general principles of better regulation. Solvency II can reduce both the costs of regulation and the risks to policyholders; for any given level of total capital required across the insurance industry, Solvency II can enhance welfare by:

- strengthening policyholder protection through capital requirements which can provide early warning of deterioration in solvency levels;
- providing insurance companies freedom to choose their own risk profile, as long as they hold commensurate risk capital;
- aligning economic and regulatory capital, including appropriate recognition of diversification benefits within firms and between groups' subsidiaries; and
- stimulating further improvements in the quality of risk management.

Regulatory capital as an early warning indicator

2.19 Solvency II should set capital requirements which are capable of providing early warning that triggers increased supervision or intervention. This requires a higher (for some firms) and far more risk sensitive capital requirement than under Solvency I.[11] This is achievable and compatible with safeguarding the competitiveness of the EU insurance sector as long as Solvency II takes into account the total capital available across the sector. Of course, the distribution of regulatory requirements across firms is likely to alter.

2.20 Without an accompanying shift to an economic risk-based regime, higher capital requirements would increase the regulatory burden on firms and could undermine the transparency of the new framework.[12] A key principle of the Solvency II framework should be that capital requirements over and above an unbiased estimate of liabilities,[13] whether they result from inappropriate margins in technical provisions or the Solvency Capital Requirement, should not be overlapping and should treat risks consistently.

Reducing the indirect costs of regulation

2.21 The economic impact of a regulatory regime can be considered in terms of the direct costs of compliance and the indirect effects that the regime can have on the behaviour of market participants. These effects include the opportunity costs that arise from inefficient allocation of capital.

2.22 The insurance industry in the EU is adopting more sophisticated risk management techniques and Solvency II should provide an impetus to this trend; as a result many firms will incur or bring forward expenditure to comply with the new regulatory framework. In order to minimise additional costs, as far as possible Solvency II should take into account existing risk modelling and processes that firms are developing for their own capital management purposes.

2.23 By adopting a risk based-approach to capital requirements Solvency II can also reduce the indirect costs of prudential regulation, and thereby make a significant contribution to the single market in insurance services and EU capital markets through:

- more efficient allocation of capital within the EU insurance sector;
- simplifying access to insurance markets in other Member States and to carry out business on a cross-border basis with greater economies of scale;
- enhanced competition in national insurance markets;
- more diversified and innovative insurance products; and
- more opportunities to pool risk.

Diversification benefits

2.24 Solvency I fails to recognise diversification benefits properly even though they are fundamental to value creation in the insurance industry and contribute to improved efficiency of insurance service provision, greater stability in financial performance which in turn contributes to policyholder protection, and a more efficient allocation of capital in the economy. Box 2 sets out a classification of diversification benefits and provides some indicative figures on the correlations used to assess their size.

[11] Under the current directives capital requirements are in some cases far below the amount of capital that a firm would need given its risk profile. As a result a firm's capital strength could deteriorate markedly and to an unacceptable level before the regulatory minima were reached.

[12] One of the widespread criticisms of Solvency I is that together the various requirements on firms - the solvency margin, prudence in technical provisions, treatment of risk mitigation etc - generate opaque and arbitrary overall minimum solvency requirements.

[13] The criteria for an unbiased valuation of liabilities are discussed in some detail in Chapter 4.

Box 2: Diversification benefits

The simplest form of pooling and diversification benefits arises within a portfolio of similar but independent risks as insurance contracts are added. They can also arise from combining contracts across portfolios of different business lines, locations and with different types of assets. Kuritzkes et al. (2003) uses three successive levels of risk aggregation to classify diversification benefits:

Level 1 aggregates the stand-alone risks within a single risk factor (e.g. the underwriting risk in each contract of a domestic motor portfolio)

Level 2 aggregates risk across different risk factors within a single business line (e.g. combining the asset, underwriting and operating risks in non-life or life insurance).

Level 3 aggregates risk across different business lines giving a composite picture at the company-wide level.

In addition well-capitalised insurance companies can diversify risk over time and groups can diversify geographically through their subsidiaries.

Diversification benefits can be assessed by correlations between different risk categories. A correlation of +100% means that two variables will fall and rise in lock-step; any correlation below this indicates the potential for diversification benefits. A correlation of around 0% (e.g. –10% to +10%) suggests no relationship between the variables. A correlation of –100% means the two variables will always move in opposite directions. Some indicative values are summarised in the tables below: [a]

(a) financial risks

	Equity	Interest rate	Property
Equity	100%	-25% to 10%	0% to 40%
Interest rate	-25% to 10%	100%	-30% to 10%
Property	0% to 40%	-30% to 10%	100%

(b) financial risks and non-financial risks

	Lapses/surrender	Mortality	Assured lives mortality
Market risk	0% to 75%	–10% to 10%	
Annuitant mortality			-75% to 20%

[a] Deloitte & Touche, 2005.

Incentivising stronger risk management

2.25 As part of the preparatory work for Solvency II EU insurance regulators analysed the available evidence on insurance failures and near misses.[14] They found that the main causes were clustered around the broad themes of management quality and inappropriate risk decisions rather than inadequate capitalisation per se.[15]

2.26 The current EU directives governing solvency focus on capital requirements (including "prudent" estimation of liabilities) to provide policyholder protection rather than on the quality of risk management. Under the existing directives two firms with the same liabilities and asset profile may have the same capital requirement notwithstanding the fact that one may have higher quality risk management. The use of increasingly sophisticated quantitative tools and integrated firm-wide approaches to risk management is spreading through the industry; the Solvency II framework should be designed to foster these changes by:

- providing adequate incentives for firms to use company-specific internal models which provide estimates of capital requirements that capture the company's risk profile better than a standardised approach;
- designing an approach to the supervisory review process which encourages firms' to engage in substantive assessment of risks rather than just compliance with the letter of regulatory requirements;
- providing an appropriate treatment of reinsurance and other forms of risk mitigation.

2.27 The topics of internal models, incentivising higher quality risk management and the treatment of reinsurance and risk mitigation are discussed in Chapters 4 to 6. Before looking at these issues in more detail, the next Chapter sets out the policy context of Solvency II.

[14] Sharma (2002).

[15] These results are broadly consistent with the result of a follow up questionnaire collated by CEIOPS that focused on the years 2001 – 2004 (Annex C of CEIOPS (2005)). The results confirm the continuing importance of management and risk decisions and highlight the exposure of insurers to downturns in capital markets.

3 The policy context of Solvency II

Summary

Solvency II should contribute to the objectives of the EU's Financial Services Action Plan by encouraging a deeper single market in insurance services and more efficient allocation of capital across the EU's financial markets

Some EU countries have introduced risk-based solvency regimes because of the limitations of Solvency I. In the absence of a new risk-based EU level framework, over time this trend could limit the extent of integration in the Single Market

Careful testing of Solvency II's quantitative impact will be required and the framework and its implementing measures should be guided by better regulation principles

Solvency II will create a unified legal framework for prudential regulation of all insurance sectors which can be updated using the Lamfalussy arrangements

Consistency with prudential regulation of banking will minimise burdens on banking/insurance groups and reduce the risk of regulatory arbitrage

Solvency II should take account of International Accounting Standards to reduce the burden of reporting requirements although regulatory and accounting standards may legitimately differ

3.1 The proposal to modernise the framework of prudential regulation for EU insurers dates back to the late 1990s. Since then many developments have taken place in EU financial services regulation, other countries' supervisory frameworks, as well as developments at a supranational level, notably on accounting standards and banking supervision. These changes form the context in which the Solvency II framework is being developed and are discussed in this Chapter. The key developments are:

- the Financial Services Action Plan (FSAP) including the development of the Lamfalussy arrangements;
- the Capital Requirements Directive (CRD) implementing the new Basel Accord in the EU and changes to the regulation of financial conglomerates;
- the development of International Financial Reporting Standards (IFRS) in particular for valuation of insurance contracts;
- international developments in the prudential regulation of insurance; and
- regulatory developments in EU Member States, including the UK, and other jurisdictions.

Completing the single market in financial services

3.2 The Lisbon European Council of March 2000 endorsed the Financial Services Action Plan (FSAP), a set of 42 measures with the overarching goal of completing the Single Market in financial services. A better integrated single market in financial services market would:

- reduce the cost of accessing capital and improve the allocation of capital across the EU;
- give firms increased opportunities to access markets in other Member States and to carry out business effectively on a cross-border basis; and
- give retail consumers access to a wider range of more competitively priced financial services products.[1]

3.3 Although not formally part of the FSAP process Solvency II has the potential to contribute to creating a better integrated single market in insurance services, leading to increased productivity in the EU insurance sector, better value for consumers and a more efficient allocation of capital across the EU.

Post- FSAP priorities

3.4 The FSAP's specific objectives are: a single wholesale market; an open and secure retail financial services market and state-of-the-art prudential rules and supervision[2]. The Commission, the European Parliament and the Member States have made substantial progress in promoting further financial integration during the last five years through the FSAP and the debate now centres on how to make further progress. The UK has set out a strategic approach to developing the Single Market in financial services; the key priorities, which are directly relevant to Solvency II, include:[3]

- **better regulation.** When new EU legislation is being considered, a proper assessment of the costs and benefits should be undertaken, and financial market participants should be fully consulted;
- **making the Lamfalussy arrangements work well.** These regulatory arrangements have been shown to work effectively for securities markets and are being extended to banking and insurance; and
- **recognising the global nature of financial services.** A global and not just EU perspective is needed when considering the impact of EU financial services regulation on the competitiveness of EU-based firms and financial centres.

3.5 These priorities are consistent with the Commission's strategy to deliver further benefits of financial integration which was set out in its recent White Paper on financial services policy.[4] The Commission has advocated that the Lamfalussy arrangements be employed to develop the Solvency II framework[5] and Member States have expressed their support for this approach. The structure of these arrangements is set out in Box 3 below. The importance of a global perspective in EU financial services regulation and the importance of better regulation principles for Solvency II were noted in the previous Chapter.

[1] HM Treasury, (2004a).

[2] HM Treasury, (2004b).

[3] The other priorities are: seeking alternatives to new EU regulation (such as more use of EU competition policy) and implementing the existing FSAP measures and enforcing them effectively. Solvency II is clearly one of the exceptions where the necessary reforms do require new EU legislation and in time consistent enforcement of the new framework will be a key priority.

[4] EC (2005b).

[5] EC (2005a).

Structure of the new framework directive

3.6 The Commission's Framework for Consultation[6] sets out its initial views on high-level policy issues and the process it envisages for the development of Solvency II. As an intermediate step to drafting the Solvency II directive the Commission has decided to produce a consolidated text that brings together prudential regulation of: life insurance; non-life insurance; re-insurance; insurance groups; and winding up and reorganisation of insurance companies.[7]

3.7 A single framework directive should yield material benefits such as simplifying the legislative basis of the regulatory new framework, limiting the scope for inconsistency and duplication between different pieces of EU legislation and potentially reducing compliance costs for firms and supervisors.

Solvency I and the Single Market

3.8 The current directives provide a legislative platform for all Member States and allow insurers complying with the directives to passport their services to other Member States. However, there are a number of areas where the existing framework leaves considerable scope for interpretation. This has resulted in a fragmented regulatory framework across the EU.[8] These create practical barriers to cross-border activities and prevent the single market from operating effectively. Areas where scope exists for a unified regulatory framework to foster a more efficient single market include:

- **Harmonised standards for valuing insurance liabilities.** Definitions of insurance liabilities are vague in the current regime, making it very difficult to understand the true financial position of an insurance company or to compare between insurance firms in different Member States;
- **A single solvency capital standard across the EU.** The weaknesses in the current framework have led some Member States, including the UK, to introduce domestic prudential requirements in addition to those set out in the Directives. Dual sets of capital requirements inevitably increase costs and complexity both for regulators as well as firms;
- **Coverage of relevant risks.** The existing regime does not use capital requirements to encourage management of credit risk, instead it applies limits to exposures to counterparties (except reinsurers), which different Member States interpret in different ways;[9] and
- **Improving the supervision of groups.** The Insurance Groups Directive (IGD) introduces a partial form of group supervision, by comparing the group-wide capital requirement to the sum of capital requirements for the group's subsidiaries. A regime that fully considers group specific issues including home/host responsibilities, differential treatment in the IGD and in the Financial Conglomerates Directive (FCD), and group diversification is needed to deliver the full benefits of a Single Market in insurance.

[6] EC (2005a).

[7] In total there are 19 extant Directives governing insurance undertakings which will be superseded by the Solvency II framework Directive (including 14 unconsolidated Directives governing non-life insurance). However, of the 19 Directives one is obsolete and a further two are in-force but were introduced in the 1960s and 1970s to abolish restrictions on freedom of establishment for insurers and reinsurers and do not include prudential requirements. The new framework directive may also require amendments to existing directives which it will not replace, notably the Insurance Accounts Directive.

[8] CEA & Mercer Oliver Wyman (2005) provide examples of the variety of approaches.

[9] Some Member States require firms to sell any assets in excess of the limit whereas others deduct the assets in excess of the limit for the purposes of prudential regulation.

Box 3: The Lamfalussy approach

The Lamfalussy approach should be used to develop Solvency II framework. This involves separating the EU's regulatory framework for financial services into four levels:

Level 1: Directives setting out a framework of overarching principles. Proposed by the Commission and then submitted to the Council of Ministers (i.e. Member States) and the European Parliament for consideration under the co-decision procedure.

Level 2: Measures implementing the principles in the Level 1 directive. The Commission develops these measures with technical input from CEIOPS and adopts them following consultation with Member States through the European Insurance and Occupational Pensions Committee (EIOPC) of representatives from Finance Ministries.

Level 3: Measures to foster supervisory convergence, developed and agreed by national regulators working through the Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS). For example, these may include guidance for national regulators to ensure consistent interpretation of the level 1 directive and level 2 measures.

Level 4: Enforcement by the European Commission to ensure effective and consistent implementation of EU legislation.

Consistency with prudential regulation of banking

3.9 The Capital Requirement Directive (CRD) updates the system of prudential regulation for the EU's banking sector. Broadly, it allows banks to respond flexibly to market demands if they have assessed the relevant risks and have adequate capital and controls to manage their risks. The Commission has proposed that a Basel II-type three-pillar structure should be adapted for regulating insurance firms, as shown in Figure 1.

Figure 1: three pillar structure of prudential regulation

Pillar 1	Pillar 2	Pillar 3
Minimum Capital Requirements	**Supervisory Review Process**	**Market Discipline and Disclosure**
Harmonised standards for the valuation of assets and liabilities, and the calculation of capital requirements	To help ensure insurers have good monitoring and management of risks, and adequate capital	Requirements that allow capital adequacy to be compared across institutions

3.10 A key challenge is to ensure that Solvency II adopts the high-level concepts that have been applied in recent reforms of prudential regulation in the banking and securities sectors, but adapts and modifies as necessary the detailed methods through which they are given effect.[10] The benefits of delivering appropriate consistency include:

- limiting the potential for regulatory arbitrage between sectors;
- reducing regulatory complexity for financial conglomerates; and
- lower costs for unified financial services regulators and those with common regulatory approaches across sectors.

3.11 Consistency between insurance and banking and securities is particularly important in supervisory related issues (such as the supervisory review process), on high-level issues such as definitions of the risk management process, and in ensuring that the principle of 'same risk, same charge' is applied across sectors. Box 4 provides an example of the extent of existing differences in capital requirements.

Box 4: Capital requirements across sectors

Although regulatory capital requirements are only one among many determinants of business decisions and portfolio structures vary across sectors, substantial differences between sectors can encourage firms to move risks solely to minimise the requirements. The table below shows an example based on Kuritzkes et al. (2003) setting out the extent of these differences in the total capital requirement for a simple £100 credit exposure to an 'A' rated counterparty. [a]

Banking regulation (current requirements)	EU credit insurance regulation	EU life insurance regulations
Treat as a commercial loan Capital requirement = 8 per cent of outstandings.	Treat as credit insurance paying insurance premium of 1 per cent per annum Solvency capital = 16 per cent of premiums or 0.16 per cent of outstandings.	Treat as an investment. Implicit asset risk charge is 3 per cent of outstandings.

[a] Based on existing directives; in practice regulators might apply an adjustment to reduce the extent of the differences.

International Accounting Standards

3.12 There have been significant developments in International Accounting Standards over recent years. Listed EU companies have been required to produce accounts using the existing International Financial Reporting Standards (IFRS) since 1 January 2005, including IFRS 4 which brought insurance contracts into the scope of IFRS for the first time. The requirements of IFRS 4 reflect the results of phase I of the International Accounting Standards Board's (IASB) work on insurance contracts. However, the IASB will only prescribe an accounting model for insurance contracts in

[10] For example, the typical risk estimation challenges faced by banks and insurers are rather different; the banking sector is primarily concerned with credit risk (a key exception being investment banks' trading risks) whereas for insurers credit risk plays a lesser role (with the exception of reinsurance credit risk). In the insurance sector some of the key risks are intrinsically long-term and more prone to changes in e.g. the legal environment which are especially hard to quantify.

Phase II; the tentative timetable for this work suggests the new Standard will not be published before 2009[11].

3.13 Other things equal, regulators would ideally rely solely on firms' statutory accounts as the basis for solvency assessment. This would minimise burdens on firms and maximise consistency between financial and regulatory reporting. However, there may be legitimate divergences between valuation for accounting and regulatory purposes because regulators' principal concern is the position of policyholders. Given this, and the uncertainty about when the IASB will conclude its work, it does not seem sensible to wait until then before developing the new prudential framework of Solvency II. The key requirement is that the financial accounting and regulatory valuation standards can be reconciled; Pillar 3 has an important role to play here, through enabling the market to reconcile the information reported for each purpose.

3.14 The IASB has already given some indication of the likely structure of the accounting models it will endorse, particularly for non-life insurance contracts. For example, in the project summary of its work on phase II the IASB has tentatively concluded that the valuation approach to these contracts should:

- reflect current unbiased estimates of future cash flows;
- reflect the time value of money; and
- include adjustments to reflect the uncertainty in liabilities due to underwriting risk.[12]

3.15 These principles are consistent with the approach set out by the International Association of Insurance Supervisors (IAIS) in their cornerstones paper[13] on principles for insurer solvency assessment and fit the framework set out by the Commission for Solvency II. Of course, the IASB has yet to provide definitive responses to a wide range of detailed technical questions on valuation principles. The next Chapter discusses valuation of insurance liabilities in more detail, including their interaction with the solvency requirements.

International developments in prudential regulation of insurance

3.16 The Commission has stated that the Solvency II framework should observe the IAIS principles.[14] The IAIS proposes[15] that solvency frameworks should follow eight principles or 'cornerstones' which can broadly be grouped into three topics: the approach to risk assessment, valuation of liabilities and solvency control, see Box 5.

[11] IASB (2006).

[12] Ibid.

[13] IAIS (2005).

[14] EC (2005a).

[15] IAIS (2005).

Box 5: IAIS cornerstones for assessment of insurers' solvency[a]

Overall approach to risk assessment

Cornerstone I: the solvency regime addresses the robustness of the insurer to meet its liabilities both short term and over a longer time span.

Cornerstone II: the solvency regime is sensitive to risk, and is explicit as to which risks, individually and in combination, lead to a regulatory financial requirement and how they are reflected in the requirement.

Cornerstone III: the solvency regime is explicit on how, for each of the risks that attract a financial requirement, individually and in combination, prudence is reflected in these requirements.

Valuation of liabilities

Cornerstone IV: the solvency regime requires a valuation methodology which makes optimal use of and is consistent with information provided by the financial markets and generally available data on insurance technical risks.

Cornerstone V: the solvency regime includes the definition of technical provisions. Technical provisions have to be prudent, reliable, and objective and allow comparison across insurers. The regime should require as a minimum that sufficient assets are available to cover the technical provisions and other liabilities.

Cornerstone VI: the solvency regime requires the determination of a ´best estimate´ of the costs of meeting the obligations arising from the insurance portfolio, taking into account the time value of money. The discount rate for this calculation is determined by reference to the relevant risk free interest rates on the financial markets.

Estimating solvency requirements and solvency control

Cornerstone VII: the solvency regime establishes a range of solvency control levels and the supervisory instruments associated with each of the control levels.

Cornerstone VIII: the solvency regime allows a set of standardised and more advanced approaches to determine the solvency requirements, and includes the use of internal models if appropriate.

[a] IAIS 2005.

Regulatory developments in EU Member States and other jurisdictions

3.17 A number of countries including Australia, Singapore, Canada, Switzerland, the UK and the Netherlands have recently proposed or introduced significant changes to the framework for solvency assessment of insurers. A recent study[16] shows a trend towards more realistic, forward-looking assessment of insurers' liabilities, especially for life companies. In addition the three European countries' frameworks incentivise companies to enhance their internal risk modelling capabilities. This section focuses on the changes to solvency regulation introduced in the UK, Switzerland and the Netherlands.

The FSA's new prudential framework

3.18 Recognising the limitations of the current directives and that the Solvency II framework would not be implemented for a number of years, the FSA introduced new risk-based solvency capital requirements from 1 January 2005. Box 6 summarises the FSA's prudential framework. In brief, the new regime introduces:

- more realistic valuations for with-profits life insurance liabilities;
- a more risk-sensitive approach to regulatory capital; and
- a clear shift in responsibility with firms assessing the quantity and quality of capital appropriate for their business along with the opportunity to do this using their own internal models.

3.19 The reforms in Switzerland and the Netherlands have a great deal in common with the FSA's reforms. Unsurprisingly, all three regimes emphasise the principle that firms are responsible for sound financial risk management and proper capital funding of asset risks and liabilities. They also take similar approaches to prudential regulation in three major areas: technical provisions, capital requirements and the supervisory review process.[17]

Technical provisions

3.20 All three jurisdictions have developed standards for technical provisions which aim at realistic valuations of assets and liabilities. The Netherlands and Switzerland also apply similar approaches to estimating prudential margins. In Switzerland the margin is based on the cost of regulatory capital necessary to run off the liabilities. In the Netherlands the supervisor has proposed a comparable approach where the margin is based on the amount that a firm buying the portfolio would require as compensation to bear the risks in the liabilities.[18]

Capital requirements

3.21 The new solvency regimes in these countries have a number of other features in common. All three countries have developed risk-based capital requirements which include:

- **a minimum capital requirement** that captures market, credit and underwriting risks (although the Swiss regime regards this calculation as part of its Pillar 2 approach);

[16] CEA and Mercer Oliver Wyman (2004).

[17] See DNB (2004) and FOPI (2004) for further details on the reforms in Netherlands and Switzerland. In the Netherlands some elements of the reforms will be implemented in 2007 and others remain subject to consultation.

[18] It is worth noting that in the Netherlands, the regulator has developed a simplified approach to calculate the risk margin for firms not using internal models.

- **standardised approaches to estimating capital requirements,** which rely to some extent on stress and scenario tests; in the Netherlands, this is supplemented with a simplified solvency test subject to regulatory approval;
- **the possibility of using firms' internal models** to calculate the solvency requirements;
- **a non-zero failure approach to the capital requirement,** using a Value-at-Risk concept for calibration: a confidence level of 99 per cent (Switzerland) or 99.5 per cent (the UK and the Netherlands) and a time horizon of one year.

Firms' risk assessment

3.22 Finally, all three countries have also recognised that capital requirements must be supplemented with firms' own assessment of risk:

- in the Netherlands, the proposal is that firms must assess their financial position against realistic long-term scenarios, investigate the three main risks and prepare a contingency plan to address them (the continuity test);
- in Switzerland, firms must submit a report setting out their risk position with minimum information requirements set by the regulator; and
- in the UK firms must assess the quantity and quality of capital given the size and nature of their business under the ICAS process (described in Box 6 below).

3.23 The new EU framework for prudential regulation will need to be applicable across all Member States and reflect the advice provided by CEIOPS. However, the approaches adopted in the Netherlands, Switzerland and the UK provide useful reference points for Solvency II.

Box 6: The FSA's risk-based prudential framework[a]

There are three complementary elements to the FSA's new solvency regime:

1. Realistic valuation and risk-sensitive capital requirements

Life insurance firms are required to calculate realistic valuations of their liabilities which require fair valuation of discretionary benefits, guarantees and options.

For with-profits liabilities the Risk Capital Margin (RCM) is based on the firm's net assets under a prescribed set of adverse asset price, credit and persistency[b] scenarios.

For non-life firms the Enhanced Capital Requirement (ECR) is a factor-based formula that gives different weights to assets, provisions and premiums. (Unlike the new requirement for life firms, the ECR for non-life firms is currently not binding).

2. Firms' self-assessment of their capital needs

Any formula for required capital has to fit 'typical' firms and make some simplifying and standardising assumptions. The FSA therefore requires firms to assess their own capital needs - the Individual Capital Adequacy Standards (ICAS).

Firms may use internal models to calculate their capital requirements under ICAS. To encourage integration of modelling regulatory capital requirements with firms' capital management processes ICAS avoids undue restrictions on how firms approach their capital assessment:

"The guidance…..does not include any mandatory stress tests or quantitative factors to be adopted by firms….if we were to provide prescriptive approaches for particular risks, we would detract from the main purpose of the ICAS objectives, which is for the capital assessment to be tailored to each individual firm's particular risks"

(FSA 2004).

3. Dialogue between firms and the FSA

The ICAS forms the basis of a dialogue between the firm and the FSA which may lead to Individual Capital Guidance (ICG) which sets out the FSA's view of the appropriate capital requirement.

Although this more sophisticated approach to solvency assessment increases demands both on firms and the regulator, the FSA is clear that: **"these assessments are the only sensible way to incorporate a firm's future business plans, strategies and capital adequacy planning into our prudential regime"** (FSA 2003a).

[a] Further details are contained in the FSA's consultations documents (CP190 and CP195) and in the FSA's policy statement (PS04/16).

[b] The risk that policyholders terminate a contract before maturity.

4 Estimating liabilities

Summary

Prudential margins in liability valuation have long been seen as a key element in many EU countries' solvency regulation

There is no quantified EU-wide standard for regulatory valuation of liabilities, making comparisons of insurers' capital strength almost impossible

Inappropriate prudential margins may obscure the value at risk for the firm in the estimated liability, detaching regulatory valuations from the management of economic capital

An unbiased valuation of insurance liabilities would reflect the best estimate plus a margin determined by the cost of capital required by the market to bear the risk of holding the liability

Diversification effects imply portfolio-wide valuation of liabilities with allowance for firm-wide effects

4.1 Unbiased valuations of assets and liabilities are the foundation of effective prudential regulation of financial companies. Valuation of liabilities forms the basis for capital requirements and these two topics are addressed together in this chapter.

Regulatory valuation of liabilities

4.2 Insurance contracts create underwriting liabilities for insurers reflecting future claims from policyholders. These have a higher degree of uncertainty as to their value and the time at which they materialise than the typical liabilities of industrial companies. Further, underwriting liabilities usually dominate the liability side of insurers' balance sheets and as a result estimating them accurately is key to assessing an insurer's financial strength.

Unbiased valuations

4.3 An unbiased valuation of insurance liabilities would help companies, their investors and others better understand how firms are managing the risks to which capital is exposed, and the increased transparency should improve the market's allocation of capital. Unbiased valuations reflect the best estimate plus an appropriate prudential margin; this should be determined by the cost of capital required by the market to bear the risk of holding the liability (also referred to as fair or market consistent valuations).

4.4 Under IASB accounting principles financial assets of the kind which constitute the majority of insurers' holdings[1] are measured at fair value: the price at which transactions would occur at arms' length between willing parties. This requires the use of market prices wherever they are available; where there is no liquid market, models and relevant market information on related financial instruments are frequently used to derive a proxy of the market price.

Liability valuation and solvency

4.5 Whether or not the regulatory valuation of insurance liabilities should be based on fair or market consistent values is one of the fundamental questions which Solvency II will have to address. This question is entirely separate from the issue of the overall

[1] International Accounting Standard 39 "Financial Instruments: Recognition and Measurement" requires that financial derivatives and financial assets categorised as "available for sale" must be valued at fair value. The majority of insurers' assets are likely to fall into this category.

level of capital required by Solvency II. However, the two issues have become conflated in part because of the traditional approach of building prudential capital margins into regulatory valuation of liabilities. The next section describes the problems of the traditional approach to liability valuation before setting out two new approaches which are being debated:

- A standard based on the expected value of the liability plus an arbitrary but quantified prudential margin
- Application of the fair value principle to liabilities, using a modelling approach for non-hedgeable risks

The traditional approach to liability valuation

4.6 The traditional approach to valuing insurers' liabilities seeks to address the risk of adverse deviation by building conservatism into the reported estimates. The current EU directives require a prudent valuation[2] but provide limited guidance on how this should be arrived at or the degree of protection that should result. Member States typically rely on valuations used in financial reporting for prudential purposes, resulting in different approaches across the EU and variability in the level of prudence included in the calculations.[3] The differences can be so large that a study on the state of the life insurance sector across the EU concluded that as a result "it is almost impossible to make meaningful comparisons of solvency between insurers in different countries".[4]

4.7 The traditional approach often fails to reflect changes in the underlying uncertainty associated with the liability because the required margin fluctuates with other variables, such as the discount rate, or simply because it is unquantified and can therefore be used to conceal the impacts of unexpected losses. As a result changes in a company's capital strength may occur without this being visible to the regulator, and in some cases, even to the senior management of the firm. Appropriate management responses and regulatory intervention may be delayed, increasing the risk of insolvency.

4.8 This kind of approach to prudential valuation may have been sustainable in a period when domestic insurance markets were largely closed to international competition, subject to detailed product regulation or when competition was less intense. But in today's more dynamic and competitive insurance markets the adverse consequences of delayed management action are likely to materialise much more quickly. In addition the lack of transparency in valuation standards and hence in insurers' capital strength may increase their capital costs.

A new standard for regulatory valuations

4.9 If Solvency II is to support the development of a single market in insurance services by creating a genuinely level playing field in solvency requirements, a consistent approach to estimating liabilities is essential. Whatever approach is chosen it should require firms to determine a best estimate of their liabilities and any additional margin for uncertainty should reflect the actual risk characteristics of the underlying insurance contracts.

Defining the best estimate

4.10 The principle that valuation of insurance liabilities should be based on the best estimate is widely accepted.[5] The European Commission's initial proposal is that the

[2] Listed firms in the EU are required to use IFRS as Chapter 3 noted however unlisted companies typically use local accounting practices which vary between Member States. Article 20(1) of the Consolidated Life Directive and article 17 of the Third Non-life Directive set out the requirements for the prudent valuation of liabilities.

[3] KPMG/European Commission (2002).

[4] MOW (2004).

valuation should be the best estimate plus a margin and Member States have endorsed this.[6] The best estimate is the mean or expected value of the distribution which also:

- applies an appropriate discount rate for future payments;
- calculates liabilities net of expected reinsurance recoveries;
- avoids inappropriate application of surrender value floors;
- measures options and guarantees embedded in insurance products at fair value; and
- includes the constructive as well as the contractual liabilities, where the insurer has discretion over benefits.[7]

4.11 Together these requirements mark a significant change from the existing directives. For example, current directives prohibit firms from discounting future liabilities in their non-life insurance contracts in some cases and in others reverse the effect of any discounting. But any estimate of the value of a future cash flow which does not reflect the time value of money is not an unbiased measure of its present value. Further, because the discount rate will vary over time so will the extent of prudence concealed in an undiscounted estimate.

4.12 For life business the current directives require that for each contract the estimated liability cannot be less than the amount to which the policyholder is entitled on surrender of the policy.[8] A best estimate approach would require assumptions about realistic surrender rates based on firms' experience. The appropriate way to assess the adequacy of the resulting provision would be to stress test the assumptions.

4.13 Finally, valuation standards in the current life insurance directive can result in under-provisioning. Deterministic methods of valuing options and guarantees which are embedded in insurance contracts do not adequately recognise that even if these elements of the policy have no value for the policyholder today they may do so in future, depending on changes in financial markets and other factors. This potential value must be recognised and priced in line with practice in capital markets. In addition, in life insurance policies where policyholders participate in returns on assets, for example through bonuses, technical provisions should reflect the expected benefits for policyholders even where they have not been allocated.

Defining the risk margin

4.14 Having defined the best estimate of the valuation, the alternatives for setting a margin to account for the uncertainty in the insurance liability are an explicit, quantified margin using a confidence interval approach or a margin based on market consistent valuation. Under the first approach the Commission's working assumption[9] is that a confidence interval would be set at the 75th percentile of the distribution for all lines of business. This follows the Australian Prudential Regulatory Authority (APRA) method which sets this liability valuation standard for non-life insurance firms. APRA

[5] See Cornerstone VI in Box 5 above.

[6] EC (2005a).

[7] That is, the benefits a policyholder would reasonably expect to receive as well as those to which the policyholder is legally entitled under the contract.

[8] This has the effect of basing the valuation of liabilities on the assumption that all policyholders immediately surrender their policies. In addition, the current directives require surrender values to be calculated policy by policy and that those where surrender would have a positive value to the firm (i.e. the pay out is less than the estimated value of the liabilities) are disregarded.

[9] EC (2005a).

acknowledges in its analysis that using the 75th percentile is an "arbitrary proxy for fair value".[10]

A quantified prudential margin

4.15 Applying any quantified margin assumes that firms can estimate the probability distribution of their liabilities (this is also an implicit condition of the market consistent approach discussed below). For firms modelling their capital requirements, the liability distributions will be an output of their model but for other firms this requirement will create a significant estimation challenge. At the same time the regulatory framework will have to settle key issues which are raised by the application of a quantified prudential margin, namely:

- Should hedgeable risks in liabilities be valued using data on financial market prices ?
- Should risk margins be applied at a contract, portfolio or firm level ?
- What level of confidence should they target ?

4.16 These questions can be settled by stipulation – for example that all risks be covered, on a portfolio basis and measured at the 75th percentile. Although this could achieve consistency across Member States, determining a specific percentile of the liability's distribution is far from straightforward and, as discussed in the next section, there is a risk that this approach leads to inappropriate regulatory valuations.

4.17 Further, the application of large prudential margins may lead to competitive distortions across companies of different sizes. Because of pooling and diversification effects for smaller companies, whose portfolios are typically less well diversified, the valuation risk surrounding a portfolio of policies will be much greater than for companies with larger portfolios. As a result although greater volatility in smaller firms' liability portfolios may require proportionately more risk capital, a large prudential margin could lead to an excessive requirement on small firms when compared with their larger peers.

A market consistent approach

4.18 The absence of a liquid secondary market in insurance contracts makes the application of the fair value principle to insurance companies' liabilities especially challenging. Of course, many of the financial risks within the liabilities can be priced – in principle any risk which can be hedged is capable of being priced.[11] For many underwriting risks however, there are no hedging techniques currently available – but the development of 'Alternative Risk Transfer (ART)' methods may lead to wider use of hedging for underwriting risks and opportunities to price these risks directly.[12]

The economic cost of bearing risk

4.19 Chapter 2 discussed the economic function of insurance companies in transferring, pooling and diversifying risks. The margin required above the best estimate of a liability is at the core of this. The actual margin firms would choose to set in the absence of regulatory requirements will reflect their opportunities to reduce risk through pooling and diversification as well as the cost of retaining the residual risk.

[10] APRA (2001). APRA also found that "in some classes of [non-life] business insurers are adopting margins which vary from 0% to 30% for what would appear to be portfolios of similar uncertainty" (APRA, 1999). This would suggest that a prudential margin set at the 75th percentile would likely be towards the top of the range of what a firm might choose on its own and could overestimate the value of the liabilities of many non-life portfolios.

[11] In life insurance contracts a large proportion of the risks are financial.

[12] For example, catastrophe swaps and bonds allow peak natural catastrophe risks to be transferred from one company to another or to the capital markets, creating prices for these risks.

Regulatory valuations which do not reflect the economic costs of the risks will tend to diverge from those which firms use to manage their risks. For example, in a risky line of business a firm may estimate the cost of retaining the risk to exceed the costs of holding capital equal to the 75th percentile of the liability's distribution; in more stable and predictable business, the reverse may occur.

4.20 Market prices exist for many financial risks and these will tend to provide a better guide to the actual cost of bearing risk than an arbitrarily determined prudential requirement. Even where there is no secondary market price for liabilities which reflects the costs of retaining underwriting risks, companies are implicitly placing a value on these margins all the time through pricing products and reinsurance contracts. Further, the price of risk bearing capital is set continuously in the capital markets.

4.21 The capacity to price risks correctly is a prerequisite of providing insurance services profitably in today's more dynamic and competitive insurance markets. The objective of Solvency II should be to relate regulatory valuation of liabilities to these actual costs of retaining risks, that is, to put them on a fair value or market consistent basis. Applying a prudential margin with a uniform confidence interval across different business lines which may have very different risks is considerably less likely to generate economically relevant valuations.

Implementing a market consistent approach

4.22 While market consistency is the appropriate guiding principle for valuation, implementation requires a pragmatic approach. In particular for non-hedgeable risks the cost of retaining the risk will need to be estimated indirectly. The cost of capital approach proposed in the Swiss Solvency Test[13] provides one example of this, as does the similar proposal made recently by the Comité Européen des Assurances and Chief Risk Officers' Forum.[14] A simplified approach may be required for small firms, and this should be structured and calibrated to provide broad equivalence with a market consistent approach.

4.23 The issue of whether liabilities should be valued on a contract-by-contract, portfolio or firm-wide basis should also be addressed in the light of firms' economic function of transferring, pooling and diversifying risks. The liability in an insurance contract may be held by a solvent insurer or transferred to one in the event a firm is put into run-off. Any transfer of liabilities to another insurer would result in the risks in a particular insurance contract being diversified across the new company's portfolio. As a consequence the capital required to bear this risk would only be the amount required by a well-diversified insurer.

Consistency with capital requirements

4.24 Because firms will be required to meet both technical provisions and solvency capital requirements, a key issue for the Solvency II framework is consistency between the two. Each must serve a specific and separate purpose so that there is no overlapping capital requirement. For example, consistency will be achieved if liabilities are valued fairly and the risk that these valuations may be subject to adverse deviation is reflected solely in the capital requirement. However, if a prudential margin is set at a uniform and inappropriately high confidence level, technical provisions and the SCR could overlap and would need to be reconciled by allowing part of the prudential margin to count as capital available to meet the SCR.

[13] Swiss Federal Office of Private Insurance (2004).

[14] CEA/CRO (2005).

Chapter 4 discussion points

4.1 Should hedgeable risks in technical provisions be valued using financial market data ?

4.2 What are the implementation challenges in a confidence interval approach to setting prudential margins in technical provisions ?

4.3 If a confidence interval approach were followed should the confidence level vary between business lines ?

4.4 How well would the cost of capital approach to valuing the non-hedgeable risks in technical provisions fit with your firm's current approach to estimating these risks ? Are there other options Solvency II should consider ?

5 Solvency requirements and supervisory intervention

Summary

The risk-based Solvency Capital Requirement (SCR) must be the key control level in Solvency II; as a result the relative levels of the SCR and the Minimum Capital Requirement are critical

Both an internally modelled SCR and the standardised SCR should reflect reinsurance and other risk mitigation techniques

The standardised SCR should reflect diversification across risk categories allowing for the limitations inherent in an approach which reflects the average firm's economic capital requirement

Validation of internal models should focus on overarching governance issues and ensuring that the modelled capital requirement meets the SCR confidence standard

Partial models should be permitted to encourage take up of internal models and firms should benefit from financial incentives reflecting the more precise modelling of their capital requirements

5.1 This chapter discusses the relationship between the Solvency Capital Requirement (SCR) and the Minimum Capital Requirement (MCR), the structure of supervisory intervention and companies' use of models as the basis for estimating their capital requirement.

The current EU solvency requirements

5.2 The current EU approach to calculating solvency capital is primarily based on a set of fixed ratios which relate capital required to business volume. The directives require that a firm's solvency capital should not fall below a minimum amount;[1] Box 7 sets out the current requirements.

Capital requirements in Solvency II

5.3 Capital requirements represent regulators' views about the minimum level of capital that firms should hold to have a reasonable expectation of being able to continue to meet their obligations to policyholders. Firms may hold capital in excess of regulatory requirements for various reasons including capacity to deliver their business strategy and to achieve a certain credit rating.[2]

5.4 It is proposed that Solvency II should have two capital requirements: the SCR MCR; Box 8 provides an illustration of the relationships between technical provisions and capital requirements in Solvency I and Solvency II.

5.5 Solvency II should also allow an additional capital requirement resulting from the Pillar 2 supervisory review process (discussed in chapter 6).[3] The capital requirements represent trigger points for progressive supervisory scrutiny and action. Solvency II will need to set out clearly the functions of the SCR and MCR and be calibrated to ensure that the level of solvency each requires is appropriate.

[1] The calculations are set out in Article 16 of the First Non-Life Directive (73/239/EEC) and Article 28 of the consolidated Life Directive (2002/83/EC).

[2] Alfon et al. (2004) provides evidence about the relative importance of these factors for UK banks and building societies.

[3] This is refered to as the 'adjusted SCR' in contrast to the Pillar 1 SCR which is the regulatory capital requirement generated by the firms' internal model or the standardised approach in Pillar 1.

Box 7: Solvency margins in the current directives

The Required Minimum Margin (RMM) for non-life companies is equal to the highest of the premiums basis, the claims basis, the brought forward amount, or the Minimum Guarantee Fund:

1. The Premiums Basis is 18 per cent of first €50 million of gross written premiums for the year and 16 per cent of the remainder; [a]

2. The Claims Basis is 26 per cent of the first €35 million Euros of average claims incurred over last 3 or 7 years (depending on the classes of business underwritten) and 23 per cent of the remainder of average claims incurred; [a]

3. The brought forward amount is the previous year's RMM adjusted for any increase in the technical provisions in the current year; and

4. The Minimum Guarantee Fund (MGF) varies between €2 and €3 million (depending on the classes of business underwritten).[b]

The Required Minimum Margin (RMM) for life companies is calculated as the higher of the required Solvency margin and the Minimum Guarantee Fund:

1. The required Solvency margin is the aggregate of two calculations: the first is 4 per cent (0 to 1 per cent for certain non-participating business) of the gross mathematical provisions. The second calculation is generally 0.3 per cent of the gross capital at risk (generally capital at risk less the mathematical provisions). In each case there is only partial allowance for reinsurance recoveries.

2. The Minimum Guarantee Fund (MGF) – normally €3 million for life companies.[b]

[a] The results obtained are multiplied by the ratio of claims incurred net of reinsurance to claims incurred gross of insurance, up to a 50 per cent reduction.

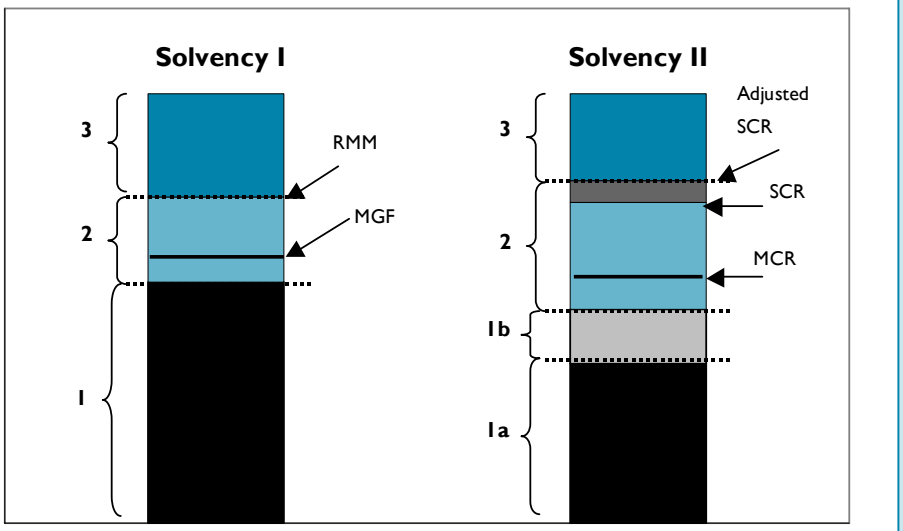
[b] These values can be reduced by up to 25 per cent for mutual insurers.

The Solvency Capital Requirement

5.6 The SCR should be a risk-based capital requirement which guarantees the minimum capital strength to maintain appropriate policyholder protection and market stability in Solvency II; it is therefore the key solvency control level for regulators and firms. When a firm does not meet the SCR, it will be required to re-establish capital to the level of the SCR, based on a concrete plan with a realistic timeframe submitted to the supervisor for approval. The MCR will not be fully risk-based (there will not be an option for firms to estimate their MCR using a model) and therefore must not be the driver of capital requirements.

Box 8: Summary of capital requirements for insurance firms

Required and free capital in Solvency I and II



Note: the relative height of these bars is indicative.

Key

1: technical provisions to match insurers' liabilities

1a: best estimate of liabilities; 1b: margin set in technical provisions

2: regulatory capital requirements

3: capital held in excess of regulatory capital requirements

Solvency I

Minimum Guarantee Fund (MGF) – the absolute minimum capital required

Required Minimum Margin (RMM) – the main solvency requirement

Solvency II

Minimum Capital Requirement (MCR) - the minimum level of regulatory capital

Solvency Capital Requirement (SCR) - the risk-based level of regulatory capital

Adjusted SCR – SCR level which includes any supplementary capital requirement determined through the Pillar 2 supervisory review.

5.7 The Commission has suggested a 99.5 per cent confidence level over a one-year time horizon as a working hypothesis for the calibration of the SCR.[4] This recognises that prudential regulation of insurance should be based on a non-zero failure regime and is broadly consistent with the levels of capital associated with 'BBB' rating, which is

[4] That is, the probability of the firm's regulatory capital being insufficient to meet technical provisions by the end of the year is 1 in 200. This calibration assumes that the SCR would be based on the Value-at-Risk (VAR – the maximum loss that could occur over a given period of time and at a given level of confidence), not the tail-VAR which reflects the expected loss in the entire tail of the distribution rather than the loss at given percentile/confidence level.

also the basis of the FSA's current regime.[5] The final decision on the precise calibration of the SCR should not be influenced by the existence of a guarantee scheme; however guarantee schemes complement a non-zero failure regime by providing a last resort for policyholders and beneficiaries.[6]

5.8 The Commission has also proposed that the MCR should be a floor for the SCR and this is clearly the right approach if the SCR is to be the operative solvency control level. But the relative calibration of the MCR and SCR needs to be appropriate: if, for example, a breach of the SCR quickly leads to a breach of the MCR, because the latter entails more intensive regulatory intervention, it will become the de facto solvency control level.

The role and structure of the MCR

5.9 Given that that SCR is the risk-based capital requirement and the key solvency control level, a logically coherent role for the MCR within the overall framework is to facilitate run-off. A firm that breaches its MCR and cannot restore its capital position quickly will be closed to new business, similar to the action that may be taken at the moment when a firm breaches the Minimum Guarantee Fund (MGF).

5.10 The MCR should provide capital as a buffer against the risk that the firm's financial strength deteriorates during the process of run-off, i.e. once an MCR breach has been identified. Where liabilities are transferred to another insurer, the risk margins in firms' estimated liabilities should provide sufficient funds to enable a well-capitalised firm to accept the liabilities in an arms-length transaction, but the MCR is needed to protect against capital erosion before the transfer is effected.

5.11 Four options have been suggested for the structure of the MCR: a continuation of the Solvency I capital requirements (possibly recalibrated); a percentage of the standardised SCR; a simplified version of the standardised SCR or a percentage of technical provisions. As the MCR represents such an important trigger point, it must be objective and relatively simple to calculate. One option which fulfils these requirements and relates the MCR to the size of the liabilities that might be transferred is to set the MCR as a percentage of firms' provisions.

5.12 Alternatively the MCR could be set as a function of the SCR so that it would respond to a greater range of risks to which the firm is exposed (depending on the extent of any simplification). However this may also be less straightforward to assess, which will be an important consideration for Member States where legal proceedings will be required to facilitate closing an insurer to new business.

5.13 Finally, because the MCR can lead to a firm being wound up, it has been suggested that the MCR could follow the Solvency I capital requirements to ensure continuity. This proposal has the disadvantage of importing the drawbacks of the current framework into Solvency II; further, there are other means of ensuring continuity, for example transitional measures, and there will in any case be an absolute floor to the MCR whichever of the options is chosen for its structure.

[5] In practice no prudential regime can ever guarantee that the probability of firm failure is zero. It is important to note that failure refers to the value of the insurer's assets falling to a level equal to its technical provisions, so that policyholders' interests would still be protected, although the firm would not be a viable going concern.

[6] HM Treasury (2005b).

Calculating the SCR

5.14 Solvency II will allow firms to calculate their SCR using a 'standardised approach' or an internal model. The standardised approach will apply a relatively simple formula, which will relate capital requirements to key risk categories.[7] All firms will also have the option of using their internal models in place of all or parts of the standardised approach.[8] However, regulatory approval will be required to help ensure that it is reasonable to rely on a firm's model for regulatory capital purposes.

5.15 To encourage effective risk management, the SCR must take full account of reinsurance and other forms of risk mitigation.[9] Eligibility criteria are required to ensure that the risk mitigation being relied upon is appropriate and effective, for example that it is legally enforceable and, in the case of funded protection, sufficiently liquid and stable over time to provide appropriate security for credit risk.[10] The next section discusses models for calculating the SCR in more detail. Here we want to discuss three wider issues: the limitations of standardised approaches, the criteria for model recognition and incentives for the use of models.

Limitations of standardised approaches

5.16 Standardised approaches to estimating capital requirements are necessarily designed for the average firm and so can only deliver an approximation to a risk-based capital requirement. A standardised approach is unlikely to deliver an accurate result where a firm's risk profile deviates substantially from the 'typical' assumptions underlying the calibration.[11]

5.17 To help address these limitations Solvency II could provide more or less sophisticated options within the standardised approach. In particular, for life insurance business a factor-based model for the standardised SCR would constrain regulators' capacity to assess a firm's Asset-Liability Matching (ALM) risk and to understand the risks arising through options and guarantees embedded in products. A scenario-based modelling approach would provide a much stronger understanding of these risks and therefore better protection for policyholders.

5.18 Solvency II should provide Member States with a mechanism to deal with situations where the standardised approach underestimates the capital required given the firm's risk profile. An attractive option would be to require a higher level of capital as part of Pillar 2. The resulting higher capital requirement could be sufficient to lead the firm to develop an internal model. An alternative would be to allow regulators to require a firm to develop a model. However, this apparently more direct approach may not in fact be as effective; for example, there is a greater risk that the model developed may be inadequate, or not appropriately integrated in running the firm's business.

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[7] While factor-based models can readily be applied in non-life business, scenario-based approaches are likely to be more appropriate for life insurance business, at least for medium-sized and larger firms. Catastrophe risks in non-life business are also likely to be more readily estimated using scenario-based approaches.

[8] This requires that the SCR is structured in such a way that elements of the formula can be substituted by the result of an approved model.

[9] There should be different treatments in the context of a standardised approach and in the context of models, which may enable accurate estimates of the range of pay-outs arising from a reinsurance contract.

[10] Similar eligibility requirements are included in the CRD, (see Article 92 of the recent Banking Consolidation Directive 2002/12/EC).

[11] For example, in the UK the new Enhanced Capital Requirement (ECR) for non-life business was calibrated assuming a well-diversified portfolio, and that the firm had good risk management controls. The FSA estimated that firms with less well diversified portfolios would need to hold between 20 per cent and 80 per cent more capital than suggested by the ECR calculation (Paragraph 3.69 of FSA (2003a)).

Criteria for model recognition

5.19 Regulatory approval will be required before a firm is allowed to use its internal model to calculate the SCR. The purpose of the validation criteria is to enable a regulatory judgement about the extent to which the model's results provide an accurate view of the firm's risks. The experience of the CRD suggests that the requirements for model approval may need to include qualitative and quantitative requirements.[12] Validation criteria could be applied to any of:

- **Model governance:** including the "use test", the requirement that the model is used by the firm's management to run the business and not just for the purposes of calculating the regulatory capital requirement.[13]
- **Model inputs:** including defining categories and quality of data;
- **Model structure:** the extent to which relationships between key risk drivers are prescribed; and
- **Model output:** calibrating the model output using a level of confidence and time horizon that are consistent with those set out in the directive (the current proposals are one year and a 99.5 per cent confidence level).

5.20 There is a risk that the criteria may be too onerous and dissuade firms from applying for model recognition. In particular if models are to pass the use test of being integrated into the firms' risk management, then validation criteria must be reasonably flexible. This will help ensure that criteria do not quickly become obsolete or unduly restrict modelling innovation.

5.21 One way of achieving flexibility is to set high level principles, in particular relating to model governances, and a requirement that the model output must be a level of regulatory capital which satisfies the SCR. Flexibility would have the advantage of allowing supervisors to recognise models which firms have already developed, where appropriate.

Incentives for the use of models

5.22 The costs of model development should not be underestimated. In the Basel II context it has been estimated that large banks (those with more than €30 billion of assets) would spend on average €115 million over a five year period to introduce Basel II requirements, including obtaining model approval.[14]

5.23 Firms will be incentivised to model their capital requirements because of the resulting improvements in risk management which can generate a higher return on capital and may lead to further efficiency gains in firms. But the upfront costs of investing in more sophisticated modelling techniques are considerable and Solvency II should recognise this by calibrating the standardised SCR to ensure that firms will typically have a financial incentive to model their capital requirements.

Types of models allowed

5.24 Unlike the CRD in which modelling of different risk categories (market, credit, operational risk etc) is compartmentalised, Solvency II aims to encourage an integrated approach to internal models: the objective is that firms with the capacity to do so would model their capital requirement across risk categories and business lines. This raises the

[12] The requirements for the approval of models for credit risk are set out in Article 84 and in Part IV of Annex VII of recast 2000/12/EC. The FSA has turned these requirements into a specific process of recognition as set out in Annex 10 of the FSA (2005).

[13] For example, see Article 84(2b) of recast 2000/12/EC on the 'use test' requirement of credit risk models.

[14] See Forrester (2003), cost estimates are also mentioned in MOW (2004b).

question, to what extent should firms have the option of modelling part of their capital requirement, and estimating the remainder through the standardised SCR ?

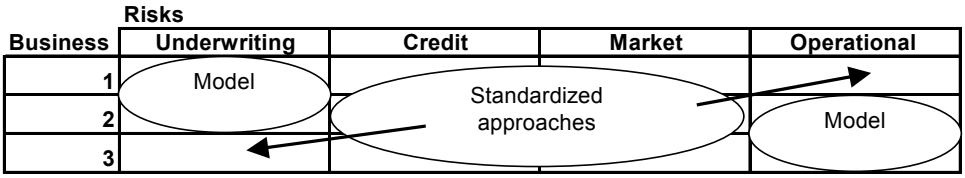
5.25 Allowing partial models would enable firms to take gradual steps towards a full internal model and reflects the fact that for different risk categories the development of modelling approaches and the quality of data vary widely. Experience in banking and securities firms suggests that different approaches are appropriate for different risks.

5.26 Solvency II will need to specify whether models could be applied to only some business lines and/or some risk categories. The Commission has stated that partial models should be allowed.[15] This will be necessary to deal pragmatically with cases where a line of business is not material to a firm's capital requirement or where merger or acquisition creates an entity using both the standardised and modelling approaches.

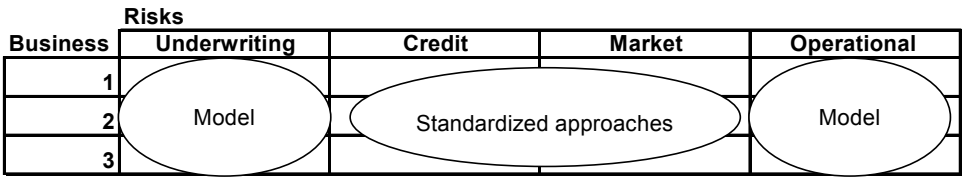
5.27 From a regulatory perspective, the concern is to control the incentives for selecting partial models solely to minimise capital requirements – 'cherry picking'. If there are no restrictions on partial modelling a firm could chose any combination of business lines and risk categories; panel a) in Figure 2 below illustrates one of the many options. Appropriate calibration of the standardised SCR and modelling approaches should limit the scope for 'cherry picking' but if necessary firms could be required to apply models to all lines of business within each risk category - the approach adopted in the CRD and illustrated in panel b) of Figure 2.

Figure 2: options for partial models

(a) partial models: no further restrictions than model approval



(b) partial models: application to all business lines



Supervisory intervention

5.28 The supervisory intervention which may follow breaches of the SCR (including the adjusted level, reflecting Pillar 2 measures such as scenario and stress testing) and MCR will need to be specified. Firms should be required to take appropriate corrective action within a clear time limit.[16] However, capital assessment and supervisory review are an on-going and dynamic process; the impact of any deterioration and the speed

[15] EC (2005a).

[16] The Commission has stated, EC (2005a), that Solvency II will not allow permanent breaches of the SCR so that some regulatory intervention will be required once the SCR is breached or likely to be breached. The main options include increased reporting to the supervisor, disclosures to markets, an action plan to restore the firm's position agreed with the supervisor, closing the firm to new business and winding down the firm.

with which an insurer reacts to unfolding adverse circumstances should also determine the nature and timing of the supervisor's response.

5.29 Accordingly, whilst SCR and MCR set clear parameters, the tools applied by the supervisor to a given deterioration in an insurer's capital position should not be driven by a simple mechanical chain of responses according to the percentage variation from SCR. Instead, supervisors should have the scope to respond flexibly, so that intervention is shaped by a broad assessment of the risks, including the extent to which these risks were foreseen, the pace of deterioration and the proposals presented by the firm to remedy the position.

5.30 Solvency II will need to set out the extent of regulatory discretion in terms of the actions to be taken by firms and the timescales to deal with a breach. The directive should set out a sliding scale of supervisory action, providing regulators with more discretion in their responses to a breach of the adjusted SCR (for example, requiring increased reporting) than for a breach of the Pillar 1 SCR (for example, requiring disclosures to markets and an agreed action plan). Figure 3 below illustrates this proposal. Where a course of action is optional, the framework directive would need to set out under what conditions it could be undertaken by the regulator.

Figure 3: sliding scale of supervisory action

<table>
<tr><th></th><th>Additional reporting</th><th>Financial Recovery plan</th><th>Closure to new business</th><th>Authorisation Withdrawn</th></tr>
<tr><td>Breach of Adjusted SCR</td><td>Required</td><td>Possible</td><td></td><td></td></tr>
<tr><td>Breach of SCR (pillar 1)</td><td colspan="2">Required</td><td>Possible</td><td></td></tr>
<tr><td>Breach of MCR</td><td colspan="3">Required</td><td>Possible</td></tr>
</table>

Chapter 5 discussion points

5.1 What are your views on the appropriate role and structure for the MCR ?

5.2 What evidence can you provide about the extent of diversification across risks which could inform the calibration of the standardised SCR ?

5.3 Is the calibration of the SCR at a 99.5 per cent probability over a one year time horizon appropriate ?

5.4 What is the right approach to validation criteria for internal models given the need to balance consistency between different Member States' supervisors with flexibility for firms ?

6 Risk management in practice

Summary

The supervisory review process will be key to encouraging stronger risk management within firms; the UK experience is that firms respond positively to the requirement to assess their own risks and engage in constructive dialogue with the supervisor

The quality of risk management can be just as important to policyholder protection as the level of solvency; incentives to foster stronger risk management will therefore be vital to the success of Solvency II

The supervisory review process should allow Pillar 1 capital requirements to be adjusted for risks that cannot be quantified and to reflect stress-testing of assumptions

In Solvency II asset risk will be reflected in the Solvency Capital Requirement; prescribing asset types and limits is unnecessary except for products where the policyholder bears the asset risk

6.1 Chapter Two set out the economic context for Solvency II, including the vital role of good quality risk management. In this chapter, we review two specific aspects of the Solvency II policy framework where incentives to improve the quality of risk management should be provided.

Pillar 2: the supervisory review process

6.2 Pillar 2 refers to the supervisory review process that complements capital requirements (Pillar 1) and disclosures (Pillar 3). The Pillar 2 supervisory review process has two aims:

- to help ensure that a firm is well run and meets adequate risk management standards; and
- to help ensure that the firm is adequately capitalised.

Qualitative aspects of risk management

6.3 Solvency I focused only on the second objective; adding the first in Solvency II has profound implications for the relationship between firms and the supervisor. In essence it requires that the firm engages in the process of assessing its own risks and the capital it needs and the supervisor then evaluates the firm's self-assessment.

6.4 This entails much more than a simple list of key risks. The result of the dialogue should be a regulatory risk assessment and mitigation plan for each firm which sets out a shared understanding not just of the principal risks but all the other relevant information for evaluating the firm's assessment; for example, the quality of data and estimation procedures, the systems in place to manage risk, the actions open to the firm in the event of certain risks materialising and so forth.

6.5 The approach the supervisor takes is essential to fostering a constructive dialogue with the firm. To maximise the benefit of this dialogue the supervisor should ideally adopt a forward-looking and risk-based approach to regulation. This helps ensure that regulatory resources are used efficiently and that firms are not subjected to unnecessary regulatory burdens. It also provides the firm with some reassurance that the supervisor will act in a reasonable way.

6.6 Scope for constrained discretion, where the supervisor reaches a regulatory judgment within a framework of clear objectives for the review process, is essential if Pillar 2 is to succeed in tackling the problems of inadequate management quality and inappropriate risk decisions that have been found to be the root cause of many insurance company failures and near misses, as noted in Chapter 2.

The FSA's approach to Pillar 2

6.7 This is the kind of approach which the FSA has adopted in the UK; following the introduction of a domestic regime with risk based capital requirements (described in Chapter 3) UK insurance firms have started to develop these processes and have submitted their initial assessments to the FSA. The emerging evidence suggests the following benefits:

- strengthening the link between capital and risk management;
- developing a collaborative approach between firms and regulators;
- putting the emphasis on senior management knowing the risks and demonstrating that these are being managed properly;
- improving the regulator's understanding of business risks;
- avoiding a one size fits all approach.

Discretionary capital requirements in Pillar 2

6.8 Because of the qualitative dimension to regulatory judgements about the strength of a firm's risk management controls and processes, a case can be made for decoupling these judgements from capital requirements. Firms and supervisors alike may be concerned that additional capital requirements in Pillar 2 will provide supervisors with too much discretion. This concern has to be balanced against a recognition that the quality of systems and controls can be as important to policyholder protection as the level of solvency. Without an incentive for firms to engage effectively with supervisory review in the form of a variable capital requirement within Pillar 2, there is a significant risk that the new framework will not succeed in stimulating the development of world-class risk management across the EU insurance sector.

Pillar 2 and wider dimensions of risk

6.9 Pillar 2 will provide a framework to deal with any simplifications and assumptions required to capture risks in Pillar 1 as well as those risks not covered by the Pillar 1 SCR. Whether a firm uses a standard formula or an internal model for Pillar 1, it will remain important for Pillar 2 to consider other factors that may affect a firm's capital needs. For example, it may be appropriate to consider a longer time-frame than the one year period proposed for the SCR, to capture insurance cycle effects or broader economic factors, and consider any capital needs arising from new business plans.

6.10 The role of stress and scenario tests in Pillar 2 will need to be considered. These have an important function in the CRD where stress testing of capital adequacy in a 'mild recession' is required. Along with the core function of ensuring that a firm's capital is adequate given its current risk profile and business plans, appropriate stress-testing will be one of the key tools in ensuring that Solvency II capital requirements do not exacerbate pro-cyclical behaviour in insurance or financial markets.

Supervisory peer review

6.11 Consistent implementation of Pillar 2 will be a prerequisite of a well-functioning single market in insurance services. This will require transparency of supervisory practices which can be achieved through peer reviews, as CEIOPS has suggested. Peer

reviews have been adopted successfully elsewhere in the financial sector, for example in the IMF's Financial Sector Assessment Program and the approach has already been recognised as a useful tool in the EU securities sector.[1]

Managing assets prudently

6.12 A key aspect of prudential regulation of insurance firms is the need to manage asset risk. The current EU Solvency requirement does not reflect asset risk; instead it is addressed through restrictions on the range of admissible assets and through quantitative requirements on asset allocation aimed at limiting concentration risk. These quantitative requirements may in some circumstances simply not achieve their objective of preventing unacceptable asset risk; they may lead to sub-optimal asset allocation and do little to promote stronger assessment and control of asset risk.

6.13 By contrast, in Solvency II the SCR will reflect the risk profile of the assets held: firms investing in riskier assets will see their SCR increasing. Calibrated appropriately this approach can provide adequate incentives for firms to manage their assets risks effectively even in the absence of additional restrictions on the type or quantity of assets held.

Prudent person approach

6.14 One approach to the regulation of insurers' asset management is to apply the prudent person concept. Broadly speaking, this is a qualitative requirement which obliges firms to invest in assets as a prudent person would given similar investment objectives. OECD analysis[2] suggests that in practice management subject to the prudent person principle will invest cautiously. Their analysis suggests a range of reasons such as benchmarking practices and the due diligence and process-orientation required by the prudent person approach.

6.15 The prudent person concept has already been employed in two other EU directives, covering reinsurance and occupational pensions. In both cases, some general principles about eligible assets and about concentration risks have been added. In the case of the Reinsurance Directive eligibility principles include limiting investments that are not admitted for trading on a regulated financial market and a general criterion for the use of derivatives.[3]

6.16 In addition to asset admissibility and concentration restrictions, Solvency I includes requirements to match at least 80 per cent of technical provisions with assets denominated in the same currency and that assets available in respect of business written in the EU are invested in the EU. Given that asset risk (including currency risk) will be reflected in the Solvency Capital Requirement and the application of the 'Prudent Person' principle in the new framework there is a strong case for reconsidering these requirements.[4]

Asset risk borne by policyholders

6.17 There is a strong case for a principles-based approach to regulating asset management where an insurer is investing on behalf of the policyholder who bears the market risk of the assets. By contrast, the case for asset management rules where insurers are themselves bearing the asset risk is much weaker. Restrictive investment rules can reduce the efficiency of the insurance sector in allocating capital across the

[1] EC (2004).

[2] OECD (2002).

[3] Article 34 (c) and (d) of the Reinsurance Directive. Concentration risks are covered in article 34 (e). Similar articles are included in the Occupational Pensions directive: article 18 (c), (d) and (e).

[4] Under Solvency I the rule that assets are localised in the EU may be relaxed but only at Member States' discretion.

EU. This risk will be greater in Solvency II than under the current directives if asset management rules are applied not just to assets covering technical provisions but also those covering the SCR.

6.18 Sophisticated techniques are available for modelling market and credit risks and derivatives provide the means to off-set these risks for many financial assets. There may be a case for some quantitative limits to prevent extreme concentration risk but in general allowing firms to choose their asset profile with the SCR adjusting appropriately to the risk in the portfolio balances the need for policyholder protection with the objective of improving capital allocation.

Chapter 6 discussion points

6.1 What risks are more appropriately handled through Pillar 2 than through the Pillar 1 SCR ?

6.2 What (if any) is the appropriate role of supervisors in prescribing stress and scenario tests within Pillar 2 ?

6.3 Is it appropriate to adjust the SCR in order to incentivise better risk management processes ?

6.4 Would any quantitative rules be required to encourage firms to manage assets prudently given that the SCR will respond to the risk profile of the company's investments ?

7 Cross-cutting issues and disclosures

Summary

The treatment of eligible capital should reflect its underlying economic characteristics while seeking to ensure maximum consistency with the definitions applied in the banking sector

The principle of proportionate regulation should be applied to smaller companies, including to ensure that prudential regulation does not create unreasonable barriers to entry

Appropriate treatment of groups is vital if Solvency II is to foster a more integrated single market in insurance services; this requires recognition of diversification benefits between entities within a group

For cross-border groups effective supervisory co-operation will be essential if prudential regulation is to avoid distorting these firms' increasingly integrated approach to capital management

7.1 This chapter discusses cross-cutting issues for Solvency II including the definition of capital, the treatment of small firms, cross-border and group issues and disclosures.

Defining eligible capital

7.2 Solvency II will need to specify the types of capital that are eligible to meet solvency requirements. Existing directives do this but need to be updated to take into account the new levels of capital adequacy, ensure compatibility with other financial sectors and take account of capital market developments.

Eligible capital within the banking sector

7.3 Prudential regulation of banking splits capital into two main tiers: shareholder capital and retained earnings (tier 1) and other forms of capital such as subordinated debt (tier 2). This aspect of prudential regulation of banking was not covered within the scope of Basel II and the Basel Committee has started making preparations for a review of the definition of capital which is likely to commence in the second half of 2006. In addition the Commission has set up a working group on eligible capital in the banking sector. To simplify requirements for banking-insurance groups and reduce the risk of arbitrage there is a strong case for the Solvency II framework directive to retain the flexibility to align with any changes resulting from these reviews.

7.4 The assessment of eligible capital should focus on the economic substance of the instruments. Capital market innovation has introduced a range of instruments which have features of both traditional equity and debt capital. Prudential regulation should focus on the underlying characteristics of these instruments and give credit according to their capacity to absorb loss during a period of financial stress, their duration and whether they are paid up.

7.5 Solvency II will need to determine whether a different mix of capital instruments should be required to meet the SCR and the MCR. For example, given that the MCR is intended to be a minimum "red-line", there may be a case for stronger reliance on equity to meet the MCR than to meet the SCR.

Disclosure requirements (Pillar 3)

7.6 The purpose of Pillar 3 disclosures is to encourage market discipline by providing key information about the capital adequacy of insurance firms. These disclosures would target market participants such as equity holders, debt holders, reinsurers and large commercial buyers of insurance. Their objectives (e.g. an adequate return on capital) are such that if market discipline is effective, their actions will encourage firms to take measures which promote regulatory objectives such as stronger risk management.

7.7 The Commission has suggested that these disclosures should be considered together with disclosures to the regulator, helping to ensure a consistent set of disclosures. It is also important that appropriate verification of the information disclosed takes place without necessarily requiring an audit of all data.

7.8 The disclosures that need to be considered can usefully be divided into three classes, as described in Box 9. Partly because of the public good aspect of information there is a temptation to focus solely on the benefits of additional disclosures without recognising adequately their costs. Solvency II should aim for a framework of disclosures which is focussed, relevant and proportionate and not one which reflects the sum of information requirements across the Member States. In addition, where possible, reporting requirements should be harmonised across sectors and they should take account of group structures. For example, requirements for securitisations could be harmonised to ensure that cross-sectoral risk transfers are appropriately identified.

Box 9: Classes of financial reporting information:

Borio et al. (2004) divide financial reporting information about financial firms into three classes:

Class 1: **Measures of financial condition and performance,** traditionally the focus of accountants and includes firm's income statement, balance sheet and cash flows. Generally there is a fairly complete and standardised (through accounting standards) data set in this area.

Class 2: **Measures of risk profiles**, traditionally the focus of prudential regulators includes measures of the risk level and diversification of portfolios, such as value-at-risk and portfolio stress tests. The level and consistency of information available in this area is more varied.

Class 3: **Measures of the uncertainty of 'Class 1' and 'Class 2' information**, these information sets are typically less developed and could include sensitivity analysis to parameter values and comparison of outcomes with previous estimates.

Treatment of small firms

7.9 The life and non-life directives include exemptions for small mutual insurers. In the UK, these firms are nevertheless regulated by the FSA but they do not benefit from passporting rights arising from compliance with existing directives. The directives allow these firms to opt-in and gain passporting rights if they regard these rights as necessary to deliver their business objectives. The FSA has identified only one case where an exempted firm chose to opt in; this suggests that there is a case for a significant rise in the exemption limit from the current €5m of annual premia.[1]

[1] At the moment, only very small firms are excluded. FSA data shows that in the UK there are about 160 mutual insurers included. Of them only 14 have assets in excess of £10 million.

7.10 In itself the legal form of a small undertaking should not determine whether it is regulated under Solvency II. Small mutual companies may have greater capital-raising flexibility through the option of making a call for contributions from their members but there is also a case for exempting small private insurance firms which provide services only in the domestic market.

7.11 There is also merit in a more flexible approach to the exemption criteria. One possibility would be to set two levels of premium income[2] so that firms below the lower level would be exempted and those in between the two levels could be exempted depending on a set of principles which the local supervisor would apply. These principles could include the size of the insurer relative to the markets it operates in and whether it has an unusual risk profile.

7.12 The emphasis of Solvency II on strengthening risk management will give rise to fixed compliance costs which are likely to fall disproportionately on small firms. The general principle of proportionate regulation suggests that Solvency II should provide some flexibility for smaller firms whose size entails that they are regulated under Solvency II but are nevertheless small relative to the market they operate in. The supervisory review process could be simplified for smaller firms given that they are likely to have simpler risk profiles than larger firms.

Group issues

7.13 Prudential requirements in Solvency II will apply at the legal entity level but as Chapter 2 noted insurance services are increasingly being provided across national borders. Given the relatively low level of activity in direct provision of cross border retail financial services, appropriate treatment of groups which provide insurance services through subsidiaries in more than one Member State will be essential if Solvency II is to help promote the effective functioning of the single market.

7.14 Solvency II's aim of a risk-based approach for the prudential regulation of insurance means that insurance firms' managements should be able to allocate capital efficiently across EU subsidiaries. This requires that solvency requirements are consistent with the principle of 'same risk, same charge' that CEIOPS has suggested. This also means taking account of diversification benefits at the group level and devising appropriate and consistent mechanisms to give credit for these benefits across subsidiaries. Solvency II should enable firms that wish to operate their risk management approaches on a group-wide basis to do so.

Diversification across groups

7.15 Current policy on insurance group issues is covered in the Insurance Groups Directive (including the calculation of capital requirements at group level and the available resources to meet group capital requirements). However, where the insurance group qualifies as a 'conglomerate' because it has both substantive banking and insurance elements, group issues are also covered in the Financial Conglomerates Directive. These directives have broadly similar approaches that give almost no credit for the benefit of diversification across insurance entities. For example, there is no flexibility in terms of the capital instruments allowed[3] and the capital requirements are simply added. On the other hand, belonging to a group can bring the risk of contagion

[2] Other relevant factors including the firm's mix of business and risk appetite could be considered at the supervisor's discretion.

[3] There are strict limits on double leverage: the situation where a holding company raises debt and transfers (some of) it as equity capital to an insurance subsidiary. This contributes to an increase in the solvency of the operating company but at the expense of an increase in indebtedness of the group as a whole.

from one subsidiary to another and it is possible that a parent company may impose inappropriate decisions on so local management.[4]

Group capital requirements

7.16 Solvency II should also allow groups to benefit from diversification between risks through a group SCR which can be lower than the sum of the subsidiaries' solo SCRs and which disapplies the solo requirements if certain conditions are met. These would include providing suitable evidence to the regulator that group-wide diversification benefits exist, that sufficient capital is fungible and that the firm operates as an integrated group.[5]

7.17 In addition, given that the MCR will not be a fully risk-based capital requirement, there is a case for defining the group MCR as the sum of the subsidiaries' MCRs since they will not properly recognise diversification benefits in the first place. However, there is a risk with this approach that if the resulting group MCR is high relative to the group SCR it will become the effective regulatory requirement, undermining the risk-based SCR.

Intra-group transactions

7.18 Intra-group transactions such as reinsurance within group allow an efficient distribution of capital and risks within a group. The economic function of these transactions is equivalent to the redistribution of capital across a group but in some cases it may be more efficient to move risks instead. Solvency II should include mechanisms to deal with these transactions – perhaps as part of the risk mitigation tools. This may require demonstrating that the relevant transactions took place on an arms length basis.

Supervisory co-operation

7.19 The existing insurance directives focus on the supervision of legal entities creating a fragmented approach for insurance groups with subsidiaries in more than one Member State. As a result, the current regime is perceived as putting more emphasis on the host regulator (i.e. the regulator of a subsidiary of an EU group) than on the home regulator. The IGD has voluntary mechanisms for co-operation, for example, the possibility of appointing a co-ordinating supervisor. However, in practice so far this option has been exercised in a few cases only.[6] This is not consistent with the approach in the FCD, which assumes the existence of a lead supervisor.[7]

Validating group internal models

7.20 Solvency II will also need to deal with new group issues such as regulatory approval of internal models for groups with subsidiaries in various Member States. Article 129 of the CRD introduces an approach requiring model approval by a college of regulators within a fixed period and assigns the home supervisor the decision if agreement is not reached. This approach would be a useful starting point for dealing with these issues in Solvency II.

7.21 Finally, third-country issues will need to be addressed. This is relevant to the treatment of subsidiaries of third-countries groups in the EU and of subsidiaries of EU

[4] Sharma (2002).

[5] This is in line with approach in the EU's CRD, which allows Member States not to apply the solo requirements if certain conditions on group operations are met. See article 69 in recast 200/12/EC.

[6] CEIOPS (2005a) notes that in the majority of groups no lead supervisor has been appointed, despite this being a possibility under the directive and CEIOPS efforts to promote a coordinated approach to supervision (the Helsinki Protocol of 2000 which introduces the Coordinating Committee and the Guidelines for Coordination Committees of 2005).

[7] See CEIOPS (2005a) for a discussion.

firms in non-EU countries in a group assessment and entry of non-EU firms into EU insurance markets. The principle of 'same risk same charge' mentioned earlier could be a useful reference for developing robust criteria to deal with third country issues.

Chapter 7 discussion points

7.1 Should Solvency II recognise innovative capital instruments in the same way as the CRD ? Should Solvency II require a different mix of capital instruments to meet the MCR and the SCR ?

7.2 What can Solvency II learn from other jurisdictions and other financial services sectors about the best approach to disclosure requirements ?

7.3 What are the key flexibilities that Solvency II should permit for small firms and mutuals ?

7.4 What tests should supervisors apply to allow recognition of diversification benefits across a group and the fungibility of capital across entities within a group ?

7.5 What steps can Solvency II take to improve home-host supervisory co-operation ?

A Glossary

Asset Liability Management the process of analysing the interaction between the risks to assets and its liabilities. One example in insurance is duration risk which arises where assets and liabilities have different maturities.

Australian Prudential Regulatory Authority (APRA) the prudential regulator of the Australian financial services industry.

Basel II (or new Basel Accord) the Basel Committee's update of the existing capital framework for the banking sector.

Basel Committee for Banking Supervision (Basel Committee) a forum for cooperation on banking supervisory matters that also sets standards for banking supervision.

Best estimate the expected value or probability-weighted average of a random variable.

Capital Requirements Directive (CRD) the amendments to EU directives implementing Basel II for credit institutions and investment business (Banking Coordination Directive, 2000/12/EC, and Capital Adequacy Directive, 93/6/EEC).

Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS) one of the Lamfalussy 'level 3' committees which develops guidance to promote consistent application of Lamfalussy directives. The other level 3 committees are the Committee of European Banking Supervisors (CEBS) and the Committee of European Securities Regulators (CESR). CEIOPS also provides technical advice to the European Commission on the development of the Solvency II framework and other policy issues.

Cost of capital approach a method for estimating the value of insurance liabilities on a market consistent basis in the absence of a market price. The liability is valued at the best estimate plus a risk margin which is assumed to be the cost to the insurer of bearing the risk in the liability. That cost is the product of the amount of capital required (e.g. to meet regulatory requirements) and its price.

Diversification benefits the reduction in the level of capital required by an insurer to achieve a given level of security (e.g. credit rating) compared with the level which would be needed if all risks were assumed to be perfectly correlated.

Economic capital the amount of capital that an insurer would actually require to bear the risks it takes on in the absence of regulatory requirements. Economic capital is a function of the targeted level of security and the insurer's capacity to assess, mitigate and manage risks.

European Insurance and Occupational Pensions Committee (EIOPC) the level 2 Lamfalussy committee of Member States chaired by the EU Commission. EIOPC will develop the level 2 implementing measures within the scope of the Solvency II framework directive (level 1). It also advises the Commission on insurance matters more generally.

Eligible capital the forms of capital which firms can rely on to meet the solvency requirements.

Enhanced Capital Requirement (ECR) a capital requirement imposed by the FSA on UK insurers (however, for non-life insurance firms the ECR is not currently a 'hard' capital requirement). The ECR is more risk sensitive than regulatory capital in Solvency I and in particular reflects asset risk.

Fair (market consistent) value the price at which transactions would occur at arms' length between willing parties

Financial Services Action Plan (FSAP) the EU's legislative framework for developing the Single Market in financial services.

Financial Services Authority (FSA) the UK's integrated regulator of financial services.

Financial Conglomerates Directive (FCD) the directive which makes provision for group-wide supervision of companies which have subsidiaries operating in more than one financial sector (2002/87/EC).

Hedgeable risk a risk that can be hedged and thus priced through purchase of a financial instrument, for example a derivative.

Individual Capital Adequacy Standards (ICAS) the FSA's framework that UK insurance firms use to assess what level and quality of capital they need to maintain.

Individual Capital Guidance (ICG) the FSA's guidance about the minimum quality and level of capital that a firm needs to hold, which is provided following the firm's ICAS submission.

Insurance Groups Directive (IGD) the EU Directive which applies Solvency I regulatory capital requirements to insurance groups and makes provisions for group supervision (98/78/EC).

Internal Model a model which represents the (material) assets and liabilities on an insurer's balance sheet and can be used to forecast the impact on solvency of changes in relevant variables e.g. financial market prices, adverse deviation in underwriting results etc.

International Accounting Standards Board (IASB) independent accounting standard-setter based in London. The IASB formulates accounting standards known as International Financial Reporting Standards.

International Monetary Fund (IMF) an international organization established to promote international monetary cooperation; to foster economic growth and high levels of employment; and to provide temporary financial assistance to countries to help ease balance of payments adjustment.

International Association of Insurance Supervisors (IAIS) represents insurance regulators and supervisors worldwide; the IAIS issues global insurance principles and standards.

International Financial Reporting Standards (IFRS) accounting standards set by the IASB; listed EU companies have been required to produce their accounts using IFRS since 2005.

Lamfalussy arrangements the arrangements designed to enable the EU to develop and update financial services legislation more quickly and easily. Under this approach, directives set out high-level principles and define the scope for implementing measures. The latter are decided by the Commission in consultation with Member States in the level 2 committees and taking into account technical advice from the level 3 supervisors' committee.

Minimum Capital Requirement (MCR) the level of capital required by Solvency II below which there would be an unacceptable risk to policyholders and which triggers "ultimate" supervisory intervention requiring the firm to restore rapidly the level of solvency.

Minimum Guarantee Fund (MGF) the minimum amount of capital required under Solvency I. For most insurers the greater of one third of the Regulatory Minimum Margin or €4million.

Pillars 1, 2, 3 the three-pillar structure which will be applied to Solvency II, derived from the Basel II reforms to banking supervision. Pillar 1 will define a quantitative standard for technical provisions and the regulatory capital requirements; Pillar 2 will define the supervisory review process and Pillar 3 the regulatory disclosures firms will be required to make publicly and to supervisors.

Prudent Person a principle which guides asset management by requiring the manager to invest as a prudent person would do.

Prudential margin a margin added to the best estimate of an insurance liability which to reflect the uncertainties in the underlying liability. An appropriate prudential margin reflects the cost of capital required by the market to bear the risk of holding the liability (also referred to as fair or market consistent valuations).

Quantitative Impact Study study undertaken by CEIOPS to quantify the impact of the proposed Solvency II reforms on firms' regulatory capital requirements.

Required Minimum Margin (RMM) the main Solvency I capital requirement, calculated as a proportion of technical provisions.

Regulatory arbitrage the process of minimising the costs imposed by regulation through exploiting the differences between regulatory regimes across sectors.

Risk Capital Margin (RCM) a term used by the FSA to refer to the risk-based capital requirements that is added to the realistic valuations of life insurance firms' liabilities where the firm has a with-profits funds of more than £500m.

Risk-free (interest) rate the rate of return available on an asset which has no or negligible credit risk.

Risk mitigation techniques methods of transferring risk including reinsurance but also through derivatives and other financial instruments.

Run-off period the period of time over which any claim made under an insurance contract is settled.

Solvency I catch-all term for the current set of Directives governing the prudential regulation of insurance in the EU.

Solvency II the new EU framework for prudential regulation of insurance companies.

Solvency Capital Requirement (SCR) the risk-based capital requirement and key solvency control level in Solvency II. Firms may use internal models to estimate the SCR or the standardised approach.

Pillar 1 SCR the SCR determined by the standardised approach or the firm's internal model, before consideration of the implications of the Pillar 2 supervisory review process for the firms capital requirement.

Adjusted SCR the SCR level reflecting the Pillar 2 supervisory review process including, for example, the results of stress and scenario testing.

Standardised approach (to the SCR) approach to calculating the SCR which prescribes a method for firms to apply; for example in non-life insurance it is likely that the standardised approach will be formula-based.

Supervisory co-operation processes designed to achieve effective regulation of cross border groups and consistent application of the relevant directives to insurers across the EU.

Surrender Value Floor a minimum value for an insurance liability set by the value an insurer would pay if the policyholder surrendered the policy.

Technical provisions the regulatory valuation of insurance liabilities.

Unbiased valuation (of an insurance liability) the best estimate plus a margin which reflects the true uncertainty in the insurance liability.

Tier 1, 2 capital types of eligible capital defined in the banking sector. Tier 1 includes share capital; it represents a higher quality of capital than Tier 2 which includes certain forms of subordinated debt.

Value-at-Risk the maximum loss a firm could sustain over a given period of time and with a given probability; also refers more generally to the methods used to estimate this value.

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