

THE IMPLICATIONS OF FINANCIAL REGULATORY REFORM FOR THE INSURANCE INDUSTRY

AUGUST 2011



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EXECUTIVE SUMMARY

International policy makers are developing new regulatory regimes aimed at ensuring enhanced financial stability in the post-financial crisis world. While the objectives of each of these regulatory initiatives are clear, the details and interdependencies need to be examined to determine their second-order impacts. Intricacies of new regulations or inconsistencies between regimes could adversely impact risk management practices and cause distortions in the market. This paper focuses principally on the impact on the insurance industry of the new regimes of Solvency II for insurers in the European Union and Basel III for international banks.

The evolving details of the new regulatory regimes provide an opportunity to assess their potential impact on insurers in the European Union and the United States. This paper lays out several key areas which should be considered before the regulations are finalized.

- Banks and insurers, while both operating in the financial sector, differ greatly in fundamental purpose, business model, and risk profiles. As such, they should face regulatory requirements which are tailored to the needs and risks of their particular industries.
- Even where risks are similar in nature, the objectives of regulation may differ quite markedly as, for example, between banking and insurance. Accordingly, the emphasis of regulatory reform should be on cross-sectoral coordination rather than harmonization. Sector-specific regulation needs to take into account the important differences between banking and insurance, in terms of business models, risk profiles and the objectives of regulation.

- Banks will need significant increases in capital and long-term funding as a result of Basel III implementation. But the appetite among insurers, as institutional investors, for increased exposure to the banking industry is, at best, unclear. Regulatory requirements that create disincentives for holdings of certain asset types could adversely affect the insurer's traditional role as long-term investors.

To create effective regulation for the financial sector as a whole, regulators from different geographies and industries must collaborate closely. Each industry must be regulated separately to ensure that the specific risk profiles of firms are addressed. However, it is also necessary to adopt a comprehensive cross-sectoral perspective on regulation to ensure that unintended effects of regulations do not create additional risks. The developing concepts of macroprudential regulation and the increasing coordination provided through the FSB should go a long way to achieving these goals, if pursued in the right spirit.

1. INTRODUCTION

New financial regulations, including Solvency II and Basel III, will shape the financial world in the decades to come. Because of the interdependencies among the financial services sectors, changes to regulation in one sector or geography are likely to have wider impacts. The IIF and its members have prepared this paper to shed light on potential impacts on the insurance industry of regulatory reform occurring in both the insurance and banking sectors.

Regulators face a difficult balancing act. The industry reasonably expects regulation to be coherent and coordinated across sectors to the maximum extent possible. At the same time, it is important that regulation is properly attuned to the specific risks posed by business models in each sector. In general, where the economic substance of activities, their risks, and the objectives of regulation coincide, there is a strong case for harmonizing regulation across sectors. However these conditions will often not be met. Certain types of risk, such as insurance underwriting risk, are largely sector specific; even where risks are similar in nature, the objectives of regulation may differ quite markedly as, for example, between banking and insurance¹.

For these reasons, the emphasis of cross-sectoral regulatory reform should be on coordination rather than harmonization. There are significant differences between banking and insurance, in terms of business models, risk profiles and the objectives of regulation. These need to be reflected in sector-specific regulation.

At the same time however, when regulations are developed independently, they will inevitably create differential incentives and unintended consequences. In formulating regulation in one sector, policymakers may make assumptions about the behavior of others. For example, the formulation of Basel III may make assumptions about the extent to which insurers would play a significant role in meeting new capital and funding requirements of banks. In reality, insurers already hold substantial amounts of bank paper, and their readiness to increase their exposures to banks, through conventional or innovative instruments, may be overstated. We welcome the recent report of the Committee on the Global Financial System (CGFS) that investigates how the new regulatory regimes may affect the fixed income strategies for insurers, including their role in providing long-term funding for banks².

In developing new regulatory regimes it is also important to note that capital requirements are only one piece of the puzzle. Internal robust risk management in banks and insurers alike is the best defense against excessive risk taking. A comprehensive, globally coordinated system of insurance supervision is also necessary to arrive at a complete overview of the risk profile of insurers. Greater cross-sectoral coordination through the FSB and robust, internationally consistent macroprudential oversight will also be essential to spot emerging risk categories, which can then be addressed appropriately for each sector³.

1 This report does not address in detail the specific issue of consolidated supervision of cross-sectoral groups, which is of course relevant in the context of the supervision of risk activities of a different nature.

2 CGFS Paper No. 44, *Fixed income strategies of insurance companies and pension funds* (July 2011).

3 These topics are addressed at greater depth in two IIF reports: *Macroprudential Oversight: An Industry Perspective* (July 2011) and *Achieving Effective Supervision: An Industry Perspective* (July 2011).

2. A CHANGING REGULATORY ENVIRONMENT

4

The regulatory environment for both the insurance and banking sectors is currently in the process of major overhaul in a number of different jurisdictions. Solvency II, which has been in development for many years, will completely revamp insurance regulations in the European Union. Its inclusion of third-country equivalence provisions and a group supervision requirement will extend its influence and impact across the world. Switzerland has already established an economic risk-based capital regime for insurers, the Swiss Solvency Test can be seen as a precursor to Solvency II. The National Association of Insurance Commissioners (NAIC) has also undertaken a Solvency Modernization Initiative to revamp elements of the capital framework that applies to US insurers. Basel III, developed by the Basel Committee on Banking Supervision (BCBS) largely in response to the financial crisis, will also have significant capital and structural impacts for banks.

The focus of this paper will be on the potential effects of Solvency II and Basel III, with some mention of the NAIC and other American regulations. While the regulatory reach of Basel III is global, Solvency II is limited to the European Union. Because of the global nature of the financial markets, however, changes in any major regulatory system will have impacts of various magnitudes in all markets. The International Association of Insurance Supervisors (IAIS) is charged with fostering greater international convergence in the sector and will advance this process over time. Several other jurisdictions, including Canada, Australia, Japan, and South Africa, among many others, are also in the process of strengthening regulation of their insurance sectors. The effects of these changes will not be considered explicitly in this paper.

3. FUNDAMENTAL DIFFERENCES BETWEEN INSURERS AND BANKS

To understand fully the implications of changes in regulation in the insurance and banking industries, an understanding of the roles each plays in the economy is essential.

3.1. THE CORE FUNCTIONS OF INSURANCE COMPANIES AND BANKS

An insurance contract involves the exchange of a fixed periodic or single premium payment against uncertain future claims payments conditional on the occurrence of a specified event. Insurers invest collected premium payments until claims become due. Insurers seek to match the maturity of assets to the expected maturity of liabilities and many choose to diversify their assets to reduce investment risk.

A core function of insurance companies is the pooling of risks assumed from a large number of policyholders. Risk pooling reduces the volatility of losses and thus allows insurers to cover the underlying risks with less capital than the aggregate amount of capital that would be needed if each firm or individual had to set aside precautionary savings against potential losses independently. The beneficial effects of risk pooling increases as the number of independent policyholders increase, allowing the insurer to benefit from greater diversification. Risk pooling thus frees capital for more productive uses, enhancing productivity and economic growth.

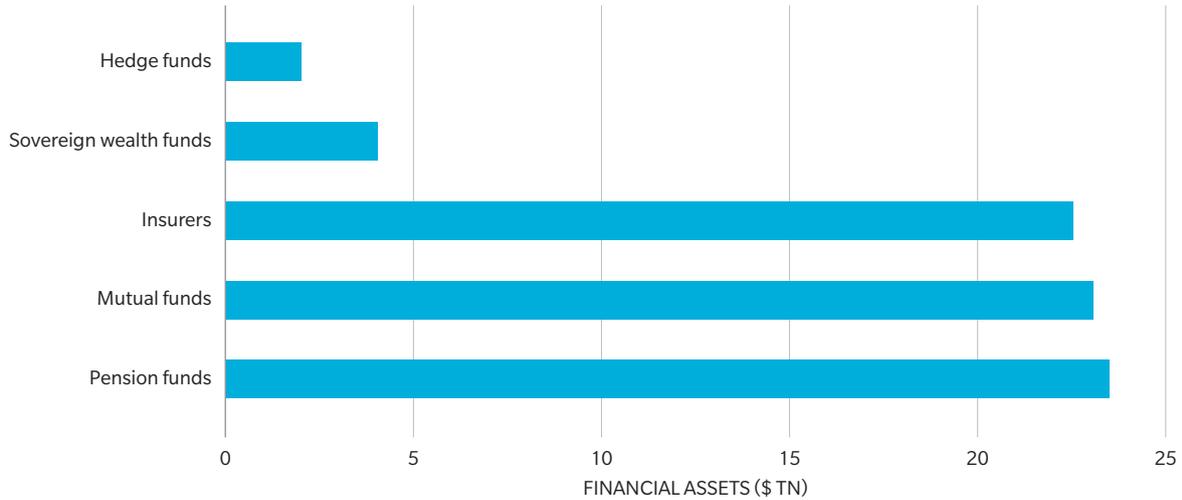
Risk pooling works best for exogenous insurance risks which are largely uncorrelated, such as natural hazards, fire, and individual mortality. A particular challenge is presented in the insurance of low frequency/high severity events such as natural catastrophes. In many cases, catastrophe risk cannot be efficiently insured at the national level, but instead requires very large risk pools that spread beyond national borders. Large (re)insurance groups thus play a role in global risk pooling.

Life insurance also functions as protection, estate planning, or a long-term investment vehicle for individuals in many countries. Products ensure that policyholders' families can remain solvent in the event of their death or that adequate and predictable provision can be made for retirement. Other products include other kinds of fixed payments including annuities.

The core functions of a bank, however, are to accept deposits, provide payment services and extend credit. Maturity transformation is inherent in this business model, as short-term liabilities (such as deposits) are typically used to fund long-term assets (e.g. corporate loans or home mortgages). Banks also benefit from risk pooling: by issuing a large number of individual credits, they are able to pool credit risk among a large number of borrowers.

In contrast to certain insurance risks, many of the financial risks assumed by banks (such as credit risk) may be correlated, in which case the risk pooling effect is dampened. This is particularly true in times of crisis. For this reason it is important that banks' regulation and risk-management practices include concentration limits.

EXHIBIT 1: FINANCIAL ASSETS OF NON-BANK INSTITUTIONS, YEAR-END 2009



Source: Swiss Re, *sigma* "Insurance investment in a challenging global environment" No 5/2010

Insurers must pre-fund their expected liabilities through the establishment of reserves. These generally consist of financial market assets, making insurers one of the largest classes of institutional investors⁴. This exposes insurers to additional risks.

But differently from banks, insurers provide a stable source of long-term financial investment due to the nature of their liabilities. For example, life insurance products, such as annuities or whole life insurance, often have a very long contract period, ranging from 5 to 30 or more years.

By matching the maturity of assets to the long-term maturity profile of their liabilities, life insurers are particularly well placed to buy and hold long-term investments. Insurance investments are not funded through short-term liabilities and therefore do not rely on maturity transformation. This matching of maturities of assets and liabilities is a fundamental difference between the inherent business models of

banks and insurers. This also means that, while it is possible for insurers to fail with potentially serious consequences, the characteristics of such failures are fundamentally different from those of banks as the lack of maturity transformation is less likely to cause a "run on the insurer."

3.2. HOW ARE INSURERS' BALANCE SHEETS DIFFERENT FROM THOSE OF BANKS?

Within the insurance business model described, insurers are subject to two fundamental types of risk: technical risk on the liability side and investment risk on the asset side of the balance sheet. While banks also face investment risk (typically characterized as credit risk) on the asset side, the primary liability risk is liquidity as liabilities fall due.

⁴ The top 1000 banks globally were estimated to have approximately \$96 TN in assets at year-end 2009.

Source: *The Banker*, "Top 1000 World Banks 2010" 6 July, 2010.

3.2.1. LIABILITIES

The bulk of the liabilities on insurers' balance sheets consist of the monetized and discounted value of their promises to policyholders. Realization of these promises is conditional upon the occurrence of some covered event, such as accident, natural hazard or death. Claims on insurers are thus largely independent of the economic cycle but depend on the statistical distribution of the underlying risks.

Insurers are exposed to technical risk which arises from the uncertainty about the frequency and severity of future losses. They partially mitigate this risk by ceding parts of their risks to reinsurers. By assuming tail risk and pooling these risks on a global basis, reinsurance enhances the stability of primary insurers.

Insurers do not rely on short-term debt to a significant degree, nor do they traditionally accept deposits, but are predominantly pre-funded by premiums. Insurer liabilities are illiquid in nature and cannot be called at short notice, or, in the case of life insurance, only at a significant cost to policyholders and involving a cancellation fee period.

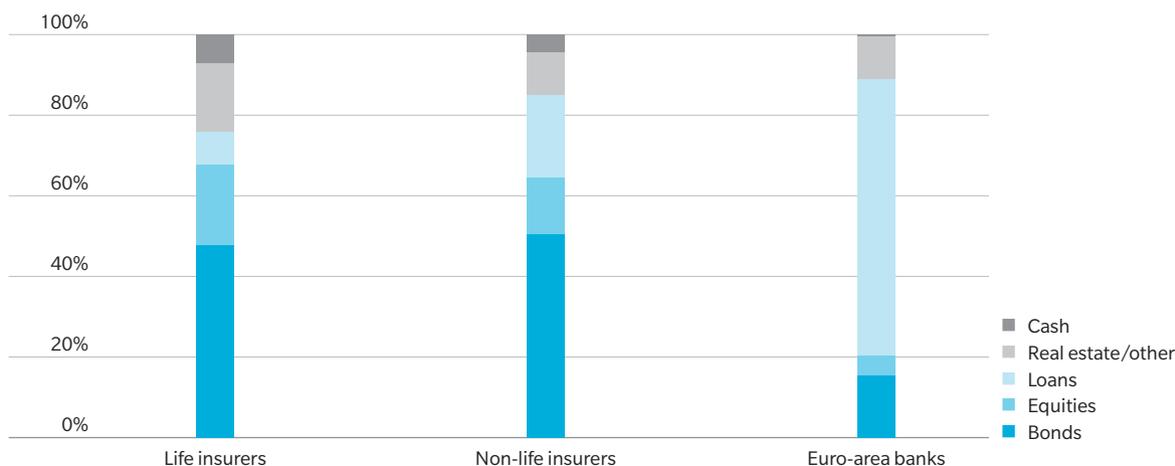
Conversely, banks' liabilities are traditionally deposit-based. Deposits may be a mix of transaction, savings, and time deposit accounts. These deposits are inherently liquid and therefore at risk of being called at any time or on short notice. In the event of a loss of confidence in a

bank, depositors can withdraw demand deposits without penalty, accelerating the decay of the bank's financial stability. Such a precipitate loss of liquidity is the basis of the classical "run" on a bank. As the recent crisis vividly demonstrated, liquidity effects can be far reaching. Short-term wholesale funding may also prove unstable as a crisis develops. Depending on circumstances, liquidity problems can spread contagiously among large, interconnected institutions.

3.2.2. ASSETS

Insurers hold assets to cover future claims by policyholders. Like any investor, insurers are exposed to uncertainty regarding the future return on their assets. Insurers can mitigate this investment risk by adopting a conservative investment strategy and by diversifying their assets broadly. Insurers manage the potential mismatch in the value and tenor of their assets and liabilities through asset-liability management (i.e. through matching the expected cash-flows from the liabilities with the cash-flows from assets). They are therefore generally "buy and hold" investors. As noted, however, the insurance business model does not rely on maturity transformation. In contrast, on banks' balance sheets, the largest single asset class is typically loans. These are not duration-matched with their funding source (liabilities), which generally consists in substantial part of demand deposits.

EXHIBIT 2: ASSET HOLDINGS OF BANKS AND INSURERS, YEAR-END 2009



Source: For insurers, Swiss Re *sigma*, "Insurance investment in a challenging global environment" No 5/2010 for banks, European Central Bank statistics for credit institutions

3.2.3. INSOLVENCY AND RESOLUTION

As a result of the risks inherent in their businesses, insurers and banks will fail from time to time. This is an inevitable and necessary feature of any market-based system. However, the nature of failures differs significantly between the two industries, largely because of the nature of their liabilities.

As an insurer's liabilities tend to be long-dated with restrictions on how and when they can be redeemed, an insurer would typically be expected to become insolvent (as a result, for example, of a shortfall in the value of its assets) long before it becomes illiquid. As a consequence, it can be unwound in an orderly manner over a long time horizon. Assets generally do not have to be sold immediately at reduced price to meet obligations, allowing the opportunity for these to recover over time⁵.

Bank failures occur much faster and have the scope to be more disorderly than insurance failures. As a bank's financial condition begins to deteriorate, liquidity and solvency issues can quickly become closely linked, potentially leading to a rapid failure. For this reason, regulators place particular emphasis on liquidity, both in "business as usual" and stressed conditions. Many countries have enacted special resolution arrangements for banks in the recognition that conventional bankruptcy frameworks are ill-suited to the fast-moving circumstances of bank failures. There is also a growing emphasis at the moment on "gone concern" capital instruments such as "bail in", which offer the prospect of deferring insolvency of banks for long enough to forestall some of the highly destabilizing features of precipitate failure.

⁵ Notable exceptions are certain activities that are not considered part of the traditional insurance market that can pose a more precipitous risk when mismanaged, as evidenced during the financial crisis. The most material examples are financial guarantee, the writing of credit default swaps, and leveraged securities lending.

Partly reflecting these considerations, the idea of “living wills” for banks has gained traction. These documents would provide a framework to guide regulators and resolution authorities in the event of a bank’s resolution. The need for such documents stems from the complexities of bank resolutions and their time-sensitive nature. While there is a need for disaster and recovery planning for insurers as going concerns, there is no equivalent need for time-critical resolution plans.

The failure of an insurer may of course have serious consequences. The resolution of a cross-border insurance group may pose challenges which arise from differences in legal environments and potential conflicts of interest between regulatory authorities defending their national interests. The latter may result in litigation that increases both the cost of resolution and legal uncertainty for policyholders. However, insurance failures differ fundamentally from those of banks with respect to the causes, time horizon, scope of mitigating action and potential system-wide consequences. The policy response to such concerns needs to take such differences into account.

3.3. THE PROSPECTS FOR COORDINATION

As noted above, regulation of banking and insurance needs to recognize and be aligned with the fundamental differences in business models in the two sectors. These are most visible in the liability structures of the two sectors and the treatment of liquidity. These call for different supervisory approaches in a “going concern” context as well as radically different arrangements for insolvency and winding down.

On the asset side of balance sheets, however, there are some similarities between insurers and banks. Both sets of regulations therefore need to address some common risks and to address these in terms of comparable methodologies focusing on duration, probability of default, and loss given default.

Of particular interest from the point of view of coordination are banking-insurance conglomerates, or firms that are nominally insurers but engage in bank-like activities, particularly where these involve significant maturity transformation and/or potential systemic risks. In this case it is critical that consolidated supervision of such firms is sufficiently global and comprehensive in its scope to identify such developments and understand the risks created. Where a nominal insurer engages in bank-like maturity transformation, regulation should be sufficiently functionally based to assure that risks are not overlooked and that “non-core” activities in the sector are subject to effective regulation. That in turn requires either that insurance supervisors have the necessary powers to regulate them or that some other functional regulator is available to do so within the structure of effective consolidated supervision. The development of systemic oversight regulation in some countries is intended in part to avoid the problem of such risks slipping through the cracks in supervision.

Above all, it is critically important that in formulating regulation for one sector, the potential spillover effects for others are understood and taken fully into account. The objective should not be to strive for harmonized regulation. Rather it should be to achieve regulation which is aligned with the risks posed by firms in the respective sectors but whose design is informed by these cross-sectoral effects. Insurance and banking regulation both affect each other. Both will be less effective if these linkages are insufficiently recognized.

4. VARYING TREATMENT OF ASSETS ACROSS REGIMES

While insurers and banks serve different purposes and operate under different business models, both play a significant role in global investment markets. The separate regulatory regimes being developed for banks, European insurers, and American insurers will create different incentives for asset holdings, largely reflecting the differing capital requirements in each. The different incentives created by the interactions of these regimes could be a cause for concern as they may increase the concentration of certain asset classes within sectors without an underlying economic rationale and potentially increase the scope of regulatory arbitrage. At the very least, these interactions need to be examined and understood.

Due to the different approaches to regulation and capital requirements, a direct “apples-to-apples” comparison of the regimes is difficult. Accordingly, the analysis below focuses on subsets of asset classes to compare how the regimes may affect the portfolio preferences of different companies. This analysis is intended to alert regulators to possible distortions that could result from the divergent capital regimes that are applied to different business models.

Using the latest capital requirements prescribed for Solvency II⁶, the NAIC Risk-Based Capital factors and industry benchmark data for Basel III’s Advanced Internal Ratings Based method (A-IRB), we present a set of sample capital factors for corporate bonds, sovereign bonds, and residential mortgages.

Some caveats are required. Different standards for eligible capital across regimes mean that capital factors are not directly comparable, especially due

to different overall calibrations and capitalization requirements. For example, we have assumed that NAIC insurers hold 300% of the company action level, which is typical for an “A”-rated insurer, but actual targets vary. We have further assumed that banks and Solvency II insurers would hold only the minimum required amount of capital. We have also made other simplifying assumptions about diversification benefits that are built into the capital calculations (which will cause the factors for Solvency II and the NAIC to be lower than the pre-diversification factors published in the most recent calibrations). Each regime also includes other risk types besides pure credit risk (e.g. interest rate risk, concentration, liquidity), all of which have been ignored for this simplified analysis. Lastly, the Solvency II “standard model” we have considered is based on an interpretation of the specifications in QIS5; such models are currently being revised and are in any event likely to be replaced by a company-built internal capital model for many large insurers. Similarly, banks’ Basel III requirements are typically based on internal parameter estimates fed into standard formulas⁷.

7 Sources for this section include various consultative documents from the Basel Committee on Banking Supervision of the Bank for International Settlements, the European Commission, Technical Specifications for QIS5 of Solvency II, NAIC Life and Property & Casualty Risk-Based Capital Forecasting Model, and benchmarks from Oliver Wyman and industry sources.

The analysis assesses Basel III capital requirements using an Advanced IRB approach using Oliver Wyman benchmarks for comprehensive assumptions for probability of default (PD) and loss given default (LGD) by asset type and rating grade; applies to “banking book” assets only. Solvency II assumptions are based on the QIS5 technical assumptions, assuming 20% diversification within market risk and 30% diversification across asset risks; only spread risk is considered – interest rate and concentration risks are assumed to be zero due to asset-liability matching and portfolio diversification, respectively. NAIC assumptions from 2010 RBC forecast models for credit risk only and 30% inter-risk diversification; other risks and tax effects are not considered.

6 Specific requirements as established in the instructions for QIS5.

EXHIBIT 3: CAPITAL REQUIREMENTS FOR CORPORATE BONDS

A. SOLVENCY II CAPITAL FACTORS

DURATION	AAA	AA	A	BBB	BB	≤ B	NR
1	0.50%	0.62%	0.78%	1.40%	2.52%	4.20%	1.68%
2.5	1.26%	1.54%	1.96%	3.50%	6.30%	10.50%	4.20%
5	2.52%	3.08%	3.92%	7.00%	12.60%	21.00%	8.40%
10	5.04%	6.16%	7.84%	14.00%	25.20%	33.60%	16.80%
25	12.60%	15.40%	18.03%	18.20%	25.20%	33.60%	20.16%

B. BASEL III CAPITAL FACTORS

DURATION	AAA	AA	A	BBB	BB	B	CCC	NR
1	0.36%	0.63%	1.59%	4.07%	9.06%	16.86%	26.12%	4.07%
2.5	0.86%	1.30%	2.67%	5.78%	11.25%	18.88%	27.79%	5.78%
5	1.69%	2.41%	4.46%	8.63%	14.90%	22.25%	30.57%	8.63%
10	1.69%	2.41%	4.46%	8.63%	14.90%	22.25%	30.57%	8.63%
25	1.69%	2.41%	4.46%	8.63%	14.90%	22.25%	30.57%	8.63%

C. NAIC – LIFE CAPITAL FACTORS

DURATION	AAA	AA	A	BBB	BB	B	CCC
Any	0.84%	0.84%	0.84%	2.73%	9.66%	21.00%	48.30%

D. NAIC – P&C CAPITAL FACTORS

DURATION	AAA	AA	A	BBB	BB	≤ B	CCC
Any	0.63%	0.63%	0.63%	2.10%	4.20%	9.45%	21.00%

However, approximate comparisons can be used and this can provide insights into relative incentives under each regime. For example, in one regime, the capital factor for a BBB bond may be four times greater than for a AAA bond, but in another regime, it may be ten times greater. Regardless of the difference in absolute levels of required capital between the regimes, this relative difference will tend to induce a company under the former regime to weight BBB bonds relatively more heavily than a company under the latter.

As the **duration** of bonds increases, so does the capital charge under both Solvency II and Basel III⁸. However, Solvency II's capital charge is for the most part linear in the duration of the bond and therefore increases at a much faster rate than does Basel III's. The maximum charge is also substantially higher. For example, under Solvency II the difference in capital requirements between a 10-year BBB bond and a 1-year BBB bond is 1260 basis points (bps), whereas under Basel III, it is only 456 bps. The NAIC makes no distinction based on duration, and instead chooses to apply a flat rate to all bonds by rating.

4.1. CORPORATE BONDS

The varying capital charges observed in the three regulatory regimes create incentives for very different types of investment behavior.

⁸ Basel uses an "effective maturity" concept that is similar to a Macaulay Duration. Solvency II employs the Modified Duration. While these are not analytically identical, they are assumed to be equal for the purposes of this analysis.

Capital charges vary as well with the **rating** of the bonds. For high-quality shorter duration bonds, the capital charges of Basel III and Solvency II are similar. However, as the credit quality of the bond deteriorates, the increase in capital charge is much smaller, particularly for short-term bonds, under Solvency II than under Basel III. The capital charge for 1-year non-investment grade bonds under Basel III can reach more than 5 times those of Solvency II.

The effect of the different treatment of duration is likely to incentivize European insurers to hold short-dated, lower-quality bonds than banks and American insurers.

This finding, which seems to be born out by the CGFS study, does not seem consistent with what might be expected or intended. Insurers, who hold long-duration assets to match the duration of their liabilities, should not be dis-incentivized from buying longer term bonds. In fact, for some rating categories (perhaps “A” or below), the capital savings from shortening the asset portfolio by one year can be larger than the capital charge from creating asset-liability mismatch⁹. While the asset-liability charge is a logical response to a potential risk at an insurer, this dynamic would seem to run counter to the precepts of good risk management as it could encourage insurers to invest in asset portfolios that are “too short” for their generally long-term, illiquid cashflow profiles, thus potentially adding to risk instead of diminishing it. Conversely banks, which are characterized by much shorter term liabilities and maturity mismatches have a relative incentive to take more long-term risk.

It is important to note in this context that the capital charges applied to insurers for holdings of bank-issued paper are the same as for other forms of corporate debt and that any impact of regulation on insurers’ preferences to hold corporate bonds could have a material impact on the capital markets. The CGFS estimates that insurers hold over 30% of outstanding corporate bonds¹⁰. It is also noteworthy that the capital charge for long-dated high-yield bonds under Solvency II approaches that of equities.

⁹ Of course, one would generally expect the yield on longer-dated assets to at least partially offset any capital differential.

¹⁰ CGFS Paper No. 44, *op cit.*, p 33.

4.2. SOVEREIGN DEBT

Each regime gives preferential treatment to the debt of certain sovereigns. Under Solvency II, zero capital is assigned to European Economic Area sovereign debt; for others, a ratings-based scale is used. For Basel III, zero capital is typically assigned to sovereign debt of the EEA or US, depending on the jurisdiction of the bank; for other sovereign debt, banks must create and justify their own tables under the A-IRB approach. The NAIC uses the same scales as for corporate bonds for non-US sovereigns.

As a result of these capital requirements, **Solvency II institutions and European banks are strongly incentivized to hold EEA debt** even if it is poorly rated. As has been seen recently, EEA debt is not risk-free, judging on recent rating agency actions (nor, indeed, is that of the US) and certainly the risk is not homogeneous for all nations within the EEA (which includes the EU countries plus Norway, Lichtenstein and Iceland). For Solvency II institutions, the bias towards sovereign debt is reinforced by the fact that the capital charges even for non-EEA debt are substantially lower than similarly rated corporate debt. This is particularly relevant for long-term debt.

This distortion may lead to over-weighting of sovereign bonds, particularly of EEA nations, in the portfolios of EU banks and insurers, although we expect this effect in particular to be mitigated by the use of internal capital models by major insurers (which are likely to recognize the spectrum of credit quality within EEA sovereigns)¹¹. “Over-weighting” in this sense would mean that capital incentives create inducements to hold concentrations of particular types of debt which may be inconsistent with patterns of holdings which would otherwise result from prudent and diversified portfolio allocations. The recent crises in the European sovereigns market have illustrated not only that credit risk exists for sovereign bonds, but also that the risk of EEA sovereigns can be closely correlated.

¹¹ When combined with the incentive discussed earlier to hold shorter-term corporate bonds, this could further incentivize insurers to allocate more longer-term assets to sovereign debt.

EXHIBIT 4: CAPITAL REQUIREMENTS FOR SOVEREIGN DEBT

A. SOLVENCY II

DURATION	AAA	AA	A	BBB	BB	≤ B	NR
1	0.00%	0.00%	0.62%	0.78%	1.40%	2.52%	1.68%
2.5	0.00%	0.00%	1.54%	1.96%	3.50%	6.30%	4.20%
5	0.00%	0.00%	3.08%	3.92%	7.00%	12.60%	8.40%
10	0.00%	0.00%	6.16%	7.84%	14.00%	25.20%	16.80%
25	0.00%	0.00%	15.40%	18.03%	18.20%	25.20%	20.16%

B. BASEL III

DURATION	AAA	AA	A	BBB	BB	B	CCC	NR
1	0.36%	0.45%	0.86%	2.15%	6.14%	14.16%	25.86%	2.15%
2.5	0.86%	1.02%	1.40%	3.40%	8.15%	16.22%	27.55%	-3.40%
5	1.69%	1.95%	2.93%	5.50%	11.49%	19.65%	30.36%	5.50%
10	1.69%	1.95%	2.93%	5.50%	11.49%	19.65%	30.36%	-5.50%
25	1.69%	1.95%	2.93%	5.50%	11.49%	19.65%	30.36%	5.50%

C. NAIC – LIFE

DURATION	AAA	AA	A	BBB	BB	B	CCC
Any	0.84%	0.84%	0.84%	2.73%	9.66%	21.00%	48.30%

D. NAIC – P&C

DURATION	AAA	AA	A	BBB	BB	≤ B	CCC
Any	0.63%	0.63%	0.63%	2.10%	4.20%	9.45%	21.00%

4.3. RESIDENTIAL MORTGAGES

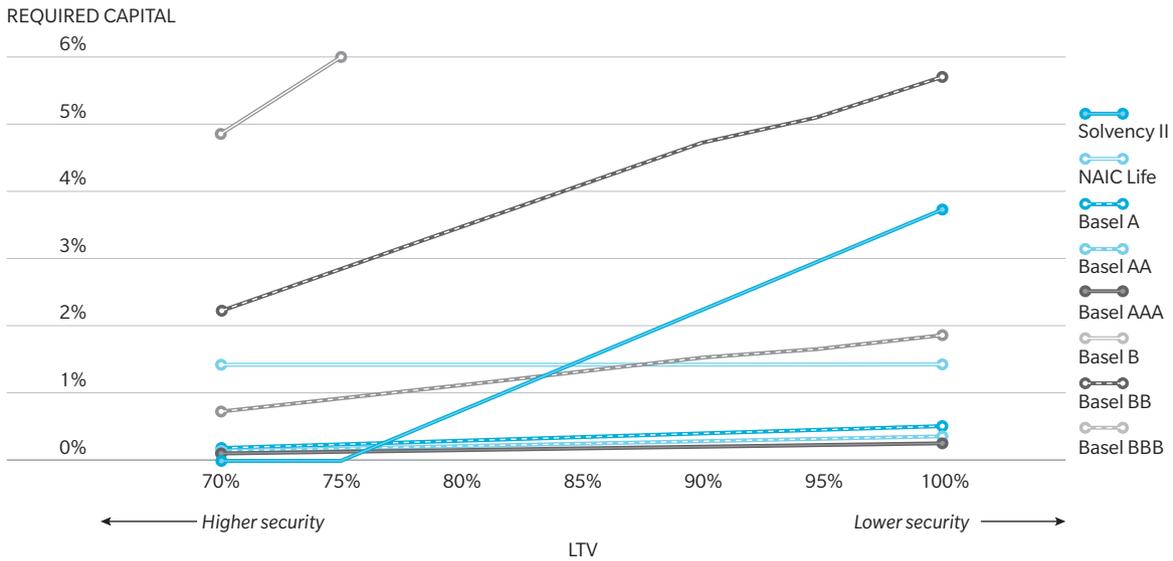
The approaches to residential mortgages vary greatly between Basel III, Solvency II, and the NAIC. The key attributes in estimating how much a mortgage owner stands to lose are the **Loan-to-Value ratio (LTV)** and the **credit quality** of the borrower. A mortgage in which the counterparty has a high credit quality is, by construct, expected to be less likely to default. In the event of a default, the magnitude of losses is determined by the gap between the loan outstanding and the value of the recoverable on the underlying collateral.

Each regime treats these two attributes differently. The NAIC does not consider either of them, instead requiring a uniform percentage of capital to be held

for all non-guaranteed residential mortgages that are not in default. Solvency II considers only the LTV of the loan, determining the capital requirement by shocking the value of the underlying collateral¹². Basel III will consider both the LTV and the bank's internal rating of the counterparty's credit quality. As with other aspects of asset holdings, companies under each regime will be incentivized to hold a higher or lower concentration of residential mortgages reflecting these capital requirements.

¹² This is based on an assumption that there is an application of collateral to the credit shock under SCR.6.37 in the QIS5 specification and a 25% market value shock to the collateral specified in SCR.5.50.

EXHIBIT 5: CAPITAL REQUIREMENTS FOR RESIDENTIAL MORTGAGES



The current structure of capital requirements on residential mortgages will incentivize European insurers to hold relatively low LTV loans, regardless of credit quality. Banks, on the other hand, will face a relative capital advantage from holding higher quality, higher LTV loans.

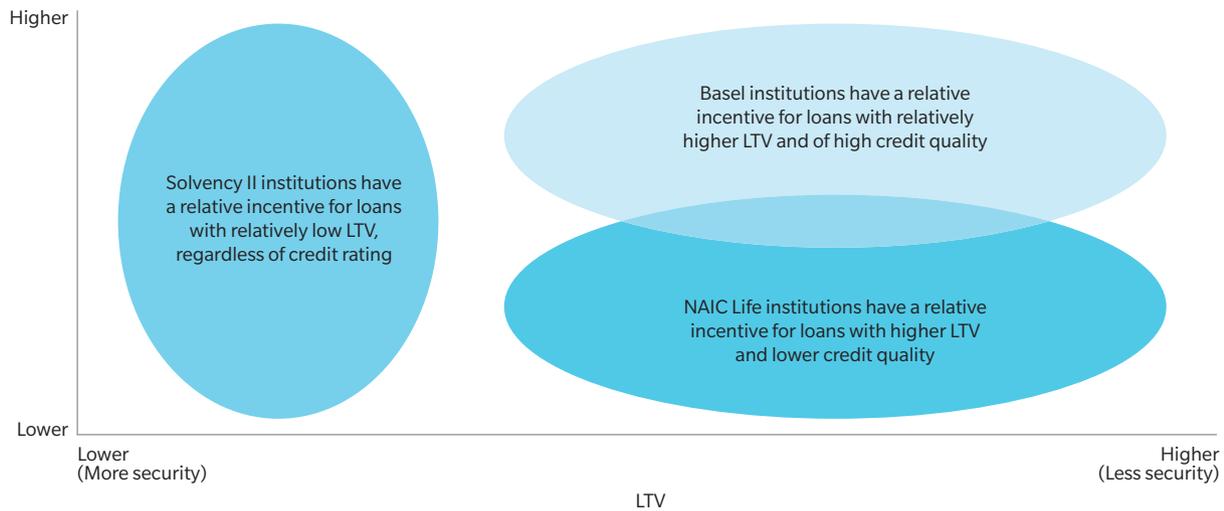
One hypothetical consequence of this could be that banks originate a broad spectrum of mortgages, but sell the low LTV mortgages to European insurers, the low credit quality mortgages to American insurers, and keep the high credit quality, high-LTV mortgages

for themselves. While each segment of the mortgage universe has its own risk/reward characteristics (e.g. high LTV loans are typically riskier, but can generally attract higher interest rates), this would be a classic example of regulatory arbitrage stemming from markedly differing capital requirements, with consequences which are foreseeable but probably not desired. This might be particularly evident if the result was a concentration of particular forms of mortgage risk on insurers' balance sheets¹³.

13 The credit-quality dimension of this analysis will be somewhat affected by the tightening of mortgage and consumer-lending regulation at the origination stage in several countries.

EXHIBIT 6: DIFFERENTIAL INCENTIVES FOR RESIDENTIAL MORTGAGES

CREDIT QUALITY



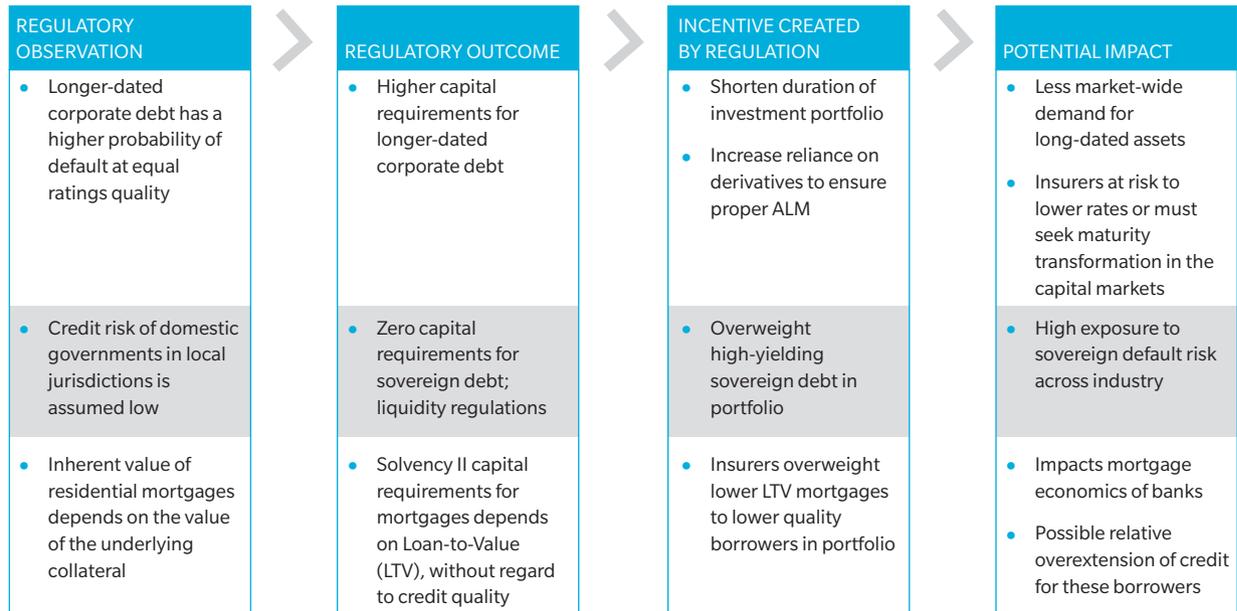
4.4. IMPLICATIONS OF VARIATIONS IN CAPITAL CHARGES: UNINTENDED CONSEQUENCES

The examples above illustrate how regulations, particularly capital requirements, which are developed to protect against specific risks can create distortions in the market which, in turn, can have unintended consequences. The generic issues illustrated by the above examples are shown schematically in Exhibit 7.

The risk of unintended consequences impacting markets increases as sectoral differences in regulation – which may be fully justified on the basis of underlying businesses and risk profiles – become more pronounced. Arbitrage and effects on market incentives are an inevitable consequence of regulation and need to be taken into account, insofar as possible, in its design. There is no prospect of completely eliminating such effects; adverse consequences should be balanced against regulatory objectives.

As noted, the steeper penalty for longer duration corporate bonds under Solvency II could result in a regulatory environment in which banks are more incentivized to hold longer term bonds than are insurance companies. This difference could significantly impact the risk management and ALM efforts for both industries. Insurers, with long-term liabilities, will be incentivized to hold shorter-term bonds, while banks, with shorter-term liabilities, are pushed towards long-term assets. To ensure proper ALM, insurers may have to increase reliance on long-term derivatives, thus potentially increasing their counterparty-risk exposure to banks, or could withdraw from longer term products altogether. In designing the respective capital and liquidity frameworks, regulators need to be mindful of these broader cross-sectoral implications alongside the sector-specific issues that the capital regimes are designed to address.

EXHIBIT 7: DEVELOPMENT OF UNINTENDED CONSEQUENCES



On a broader scale, regulating an entire industry on the basis of complex but standardized processes might limit the incentive for firms to develop individualized models. Insurers under Solvency II will have to expend time and energy completing the SCR calculations, which provide a detailed analysis of their risk profiles and capital positions. As a result, some may choose to rely on the SCR methodologies to determine their internal capital requirements. If too many companies begin to manage their capital according to a single methodology, they may overweight certain asset classes, products, or risk types which are advantaged

by that model. If this activity takes place industry wide, it creates substantial model risk. Some might argue that the similarity of calibration methodologies under Basel II led to correlated cyclicalities in the industry’s overall capitalization, exacerbating the financial crisis. The provision in Solvency II permitting the use of approved Internal Capital Models, thus creating an “ecosystem” of models with differing methodologies and resulting incentives, could mitigate this effect, as well as aligning capital requirements more closely to specific risk profiles.

5. IMPLICATIONS OF BASEL III FOR INSURERS

5.1. NEED FOR BANKS TO RAISE CAPITAL

The implementation of Basel III will require banks to raise a significant amount of additional capital. Current estimates indicate that banks could have to raise over two trillion dollars of capital to fully transition to the new requirements¹⁴. This would amount to several billion dollars for each major bank. Capital ratios are being raised for Tier 1 Common Equity, Tier 1, and Tier 2, and new capital will be needed across each. The form of capital will include common equity for the Tier 1 Common Equity, perpetual instruments for Tier 1, and subordinated debt for Tier 2. It could also involve issuance of conditional convertible capital, either as an option or possibly as a requirement in some countries. In addition, the new liquidity ratio requirements under the net stable funding ratio could require banks to issue more than \$3.5 TN of medium-to-long term debt.

5.2. IMPORTANCE OF INSURERS TO BANK CAPITAL RAISING

Capital raising on the scale needed to meet the new Basel requirements will place very heavy demands on capital markets. Currently, the banking industry in the US and Europe has bank capital of approximately

\$4.3 TN and debt outstanding of \$8.1 TN. The higher amount of capital required – approx \$2.2 TN – would therefore represent an approximate 18% increase in total bank securities outstanding¹⁵. Such an increase will be difficult without extensive participation from many types of institutional investors including sovereign wealth funds, insurers, private equity, and hedge funds. As discussed earlier, insurers are major institutional investors, holding more than \$22 TN in assets. As such, insurers may be expected to play an important role in any capital raising by banks.

Insurers' current exposure to banks varies by asset class. Insurers, as long-term investors, tend to favor debt over equity holdings in their general accounts (see Exhibit 2, above). As a consequence, their holdings of bank equity tend to be quite small relative to banks' entire market capitalization. A much larger proportion of insurers' investable assets are instead in fixed income. Indeed, insurers are already estimated to hold approximately 60% of banks' subordinated debt¹⁶.

5.3. INSURER APPETITE

While the expectation may be that insurers will play a major role in any major bank equity debt issuance, their appetite for more exposure to bank debt is unclear. Bank debt, meanwhile, already makes up a significant portion of insurers' portfolios.

14 This assumes that banks fully fund heightened capital and liquidity requirements and do not instead choose to ration credit.

15 Source: IIF internal estimates.

16 <http://www.bloomberg.com/news/2011-03-28/european-bank-funding-threatened-as-basel-iii-rules-clash-with-solvency-ii.html>. Retrieved on May 2, 2011.

Based on a small sample of major international composite insurers that are members of the IIF, bank equity comprises between 10% and 20% of the equity portfolio. At the same time, banks comprise approximately 12% of US and European stock market capitalization. Similarly, 10% to over 20% of their holdings of non-securitized debt assets are issued by banks, compared to a share of such debt in US and European market-wide total of 8%¹⁷. Data collection exercises currently being undertaken by the IAIS might shed further light on this matter, but insurers in aggregate thus appear not to be “underweighting” banks in their investment portfolios. Therefore pro rata participation by insurers in the expected 18% increase in banks’ market issuance due to Basel III would represent a material shift in the sectoral asset allocation of insurers’ investments, although covered bonds might present a viable alternative. Interviews conducted by the CGFS actually indicate a general reduction of insurers’ exposures to banks after the global financial crisis¹⁸.

New capital instruments may also be significant going forward. Under Basel III, Tier 1 Additional Capital and Tier 2 capital for internationally active banks must be capable of being written down or converted into equity capital. More generally, there has been considerable market and regulatory interest in developing forms of contingent capital, but there remain somewhat differing views about how a market-wide version of such instruments would work (a number of firms have already issued instruments with CoCo characteristics). In general, however, the Contingent Convertible (CoCo) has been conceived as a tool to strengthen capital at times of stress. A CoCo would act as a debt instrument, but upon breach of predetermined trigger, would convert to equity. In general, “high trigger” CoCos would convert when the firm’s capital is under stress but when it is not close to insolvency, and would therefore serve to boost going concern capital. This is distinct from “low trigger” CoCos

which would be triggered at, or close to, insolvency, thus providing a source of “gone concern” capital facilitating an orderly wind-down. Regulators in some countries may allow such instruments to be used to meet additional national capital surcharges. The Basel Committee is continuing to study the use of CoCos though it has ruled out the use of CoCos for meeting mandated levels of additional loss absorbency for institutions judged to be globally systemic. If the Basel proposal is implemented, only common equity and retained earnings will be eligible forms of additional loss absorbency¹⁹.

While conditional instruments could play a role in increasing the resilience of individual financial institutions, they could also have the effect of spreading financial stress. After a security converts to equity, its value might fall considerably. Additionally, any insurer holding the paper may need to hold additional capital against it, as equity charges are generally high compared to fixed income. The risk/return considerations involved would clearly be very different depending on whether the instrument concerned is a “high trigger” (going concern) CoCo or a “low trigger” (gone concern) one. Both, however, have the characteristic that debt instruments would be converted into equity at times of heightened risk.

Additionally, as discussed above, many insurers already have substantial exposure to subordinated or hybrid bank debt (much of the hybrid debt will, however, have to be phased out in accordance with Basel III). Data from a small sample indicates that exposure to such debt can be up to 20% or even higher of holdings of non-securitized bank debt assets. Revisions to ratings-based capital scales under Solvency II would serve to further disincentive insurers from holding lower-rated bank debt. At the same time, a lack of revision under NAIC guidelines could attract a substantial portion of subordinated instruments to US insurers, creating potential concentration risks.

17 The total ownership figure can be substantially higher for insurers with close ties to a bank, e.g. through cross-holdings or a shared corporate parent.

18 CGFS Paper No. 44, *op cit*, p. 34

19 The June 25, 2011 press release by the Group of Central Bank Governors and Heads of Supervision, found at <http://www.bis.org/press/p110625.htm>.

It therefore remains unclear what the investor appetite will be for CoCos or newer forms of assets. In addition to their ambiguous debt/equity status, the complex nature of these instruments and uncertainty surrounding them may make them difficult to price. While this might be relatively more straightforward at the level of individual issuers, it may be more challenging where they are intended to play a fundamental role in changing the capital structure of the entire banking regulatory system. The terms and regulatory treatment of these investments will be essential to the market appetite for them. We also note, however, that market interviews conducted by the CGFS indicated generally low receptivity to CoCo instruments among insurers, regardless of accounting and regulatory treatment²⁰.

From a regulatory capital perspective, purchasing additional bank debt might be expensive for an insurer. The capital charges for bank-issued paper are the same as for any other corporate debt and are based on the issuer's rating and the duration of the debt. Due to banks' mismatch of short-term liabilities to long-term assets and to regulatory requirements for subordinated debt to be long-term to be included as capital, debt issued by banks will largely be of longer duration. This will be compounded by the new liquidity requirements under Basel III, which will require banks to have enough liquid assets on hand to fund all longer-term liabilities for one year without raising new funds and will penalize use of short-term wholesale funding. This could significantly increase the need to raise medium-term debt. As noted, under Solvency II, long-term corporate debt is subject to heavy capital requirements. Insurers will face additional capital penalties if they assume concentration risk in the form of high levels of debt or equity exposure to a single bank.

Another potential issue, which is currently largely unexplored, is the effect that the combination of new requirements regarding capital (especially on the trading book), leverage, and liquidity requirements will have on banks' willingness and ability to be active participants or market-makers in repurchase (repo) markets, money markets, and bond markets, at both cash and derivatives levels, and to provide tailored derivative hedging instruments to insurers (particularly if they move to exchanges). These developments may all affect insurers' participation in such markets.

5.4. INSURERS AS INVESTORS IN SECURITIZATIONS

Regulatory reforms stemming both from Basel III, the revision of the Capital Requirements Directive in the EU, and the Dodd-Frank Act in the United States, could further impact the balance sheets of the insurance industry insofar as they invest in securitizations. These markets have played an important role in insurers' long term asset holdings. While some insurers have in-house mortgage origination capabilities, many do not. As a result, access to long-term exposure to the residential and commercial real estate markets had been facilitated by securitization.

20 CGFS Paper No. 44, *op cit*, pp. 34-35.

During the financial crisis the securitization market was heavily disrupted and volumes remain far below pre-crisis levels. Revival of this market, in some form, is important to ensuring investment portfolios are well diversified. After suffering losses on their securitized portfolios during the crisis, however, insurers share the views of many regulators that the market needs to be more robust than in the period leading up to the crisis. Specifically, investment managers will seek simplified securitized products which provide more transparent structures and risks. If the securitization market does not rebound in this way, there will be increased demand for long-term assets in other asset classes, such as corporate bonds and sovereigns, possibly creating pressures in those markets and downward pressure on long-term returns (potentially problematic in itself and compounded by new – and notably high – capital requirements for securitized assets under Solvency II). In addition, the liquidity requirements as they currently stand will give banks powerful incentives to purchase sovereign obligations, which is likely to affect the returns available from such markets. It could possibly even affect their liquidity, given that banks will be required to hold them to meet their liquidity coverage requirements rather than trade them actively.

While market factors primarily drove the disruption, and have contributed to its slow recovery, regulatory requirements will also have a bearing on the nature and speed of the securitization market's recovery.

One of the major changes included in subsequent reforms to Basel II has been to increase the capital charges for lower-quality securities (e.g. equity tranches), particularly for originating banks. Concurrently, the Dodd-Frank Act in the US requires originators to retain exposure to securities which they originate (except for qualified residential mortgages, which are likely to be defined conservatively). In addition, capital requirements now address certain off-balance-sheet items. These changes, while a logical reaction to the credit crisis, could make banks more hesitant to securitize loans.

While there is still uncertainty as to the magnitude of the effect these reforms will have, particularly due to uncertainty around the implementation of Dodd-Frank and the "skin in the game" provisions in the EU, they will undoubtedly result in securitizations becoming more expensive. Higher capital charges and an increased risk exposure for banks will make the origination more expensive, while an increase in the capital charge under Solvency II will increase the costs for insurers of holding the securities. This, in turn, would tilt the asset allocation of insurers away from securitized assets, altering the prudent asset allocation they would otherwise adopt. Covered bonds have been presented as a viable and capital-efficient alternative, but the net impact on exposures and asset yield have yet to be determined.

6. SOME CONCLUSIONS ON REGULATORY RESPONSES

Strengthening capital standards is a key part of the current global regulatory reform program, and a review of these standards in both banking and insurance is necessary and timely in the light of lessons learned in recent years. The principal objective of such reviews must be to align capital requirements more closely with the risks inherent in these sectors.

However, risk is complex and multi-dimensional and policymakers need to have regard for this when framing their responses. The analysis in this report highlights a number of key considerations in this regard.

- Policymakers face a difficult balancing act with respect to the extent to which capital requirements and other aspects of regulation should be harmonized. In general, activities which give rise to identical risks should be subject to the same capital requirements irrespective of the sector in which they occur, provided the objectives of regulation are the same. But in many cases these conditions will not be met: either risks will be sector-specific (such as insurance underwriting risk) or, where the risks are very similar, the objectives of regulation may differ (as between banking and insurance).
- The principal objective therefore needs to be to align capital requirements and other aspects of regulation closely to risk, with maximum efforts at coordination between supervisory activities.
- Capital requirements are only one dimension of regulatory reform, albeit a critical one. Strengthened supervision, especially on a cross-border basis, is necessary to develop a clear perspective on financial groups' activities, risk profiles, management, governance and controls. Macroprudential oversight has a key role to play in allowing policymakers to identify and respond to emerging sources of system-wide risk²¹. And no amount of regulation will be effective if executives do not strive to identify and embrace sound practices in their internal governance and management of risk. Supervisors in major jurisdictions are focusing increasingly on the importance of improved risk governance and risk management. Strong firms welcome effective supervision that contributes to the quality of their risk management and increases confidence in the quality of risk management of other firms²².
- Strengthening capital standards will always have unintended as well as intended consequences – and these will be more significant the more marked the increase in requirements. The intended consequence is to increase the buffer of financial resources that firms have available to withstand losses. The wider, and sometimes unintended, consequences of tightening capital standards can take a variety of forms.
 - As demonstrated in this paper, changes in the capital requirements attaching to different asset classes will inevitably have implications for firms' asset allocation decisions. The key issue for policymakers is to ensure that these are well understood. For example, the powerful incentives provided under the new regulatory regimes for banks and insurers to increase their holdings of sovereign debt may be questionable in this context.

21 IIF Report *Macroprudential Oversight: An Industry Perspective* (July 2011).

22 IIF Report *Achieving Effective Supervision: An Industry Perspective* (July 2011).

- Furthermore, excessive conservatism in the design of capital and liquidity requirements for banks is likely to dampen the availability of credit, especially to small and medium enterprises, particularly given that insurers are being dis-incentivized from long term investments. Both of these factors could reduce the potential for growth in the economy²³.
 - We appreciate the recent paper from the Committee on the Global Financial System of the BIS, which analyzes many of the effects that recent and impending regulatory and accounting changes may have on the fixed income investments of insurers, and potential knock-on effects on the supply of long-term funding to banks. We believe that many of these effects may be long lasting.
 - Policymakers need to consider whether changes in regulation designed to address one set of (usually historical) problems may not create others. There was a clear need to address the many shortcomings in certain securitization structures that contributed to the crisis. However, it is also possible the regulatory response may be playing some part in inhibiting the development of an appropriately more robust and transparent securitization market. Such an outcome would create distortions in limiting the scope for insurers to arrive at optimal asset allocation and restricting credit providers' access to funding.
 - Macroprudential supervisors have a key role in focusing on risk activities, markets or products that present a potential systemic risk. Supervisors at the microprudential level should then address the specific institutions that conduct or are exposed to those risky activities. Any new regulatory requirements for the insurance industry should not undermine the fundamentals on which the industry depends, such as independent risk pooling, global risk diversification, fungibility of capital across borders to pay claims worldwide and efficient investment in long-term assets.
 - Tightening capital standards can also lead to a form of regulatory arbitrage in which firms seek to minimize capital and other costs by developing new types and channels of activity. Risk tends to pool where it is least supervised.
 - Finally, in focusing on regulatory requirements in one sector, policymakers may make implicit assumptions about the response of other sectors. The reforms under way in banking regulation will involve profound changes to banks' capital holdings along at least three dimensions: a) the quantity of capital; b) the quality of capital; and c) a potential role for innovative instruments such as contingent capital and debt capable of being "bailed in." Liquidity regulation will also profoundly change their funding, their participation in traditional interbank and short-term markets, and possibly change their business models in important ways as well. This report demonstrates that assumptions regarding the willingness and ability of the insurance sector to provide a ready market for new capital may be overstated. Insurers may feel that they are already fully weighted in bank assets; new regulations may militate against any further increase (even if insurers' portfolio preferences supported this); and innovative instruments may not be consistent with insurers' asset needs or preferences.
- The objective of this report is emphatically not to question the need for profound and far-reaching change in banking and insurance regulation. It does however seek to illustrate that regulatory change in any one sector should not be considered in isolation and that a full understanding of potential cross-sectoral effects is necessary if the full benefits are to be realized. This understanding should happen early in the policy-making process, so that irresolvable conflicts (and unintended consequences) do not arise.

²³ The IIF *Interim Report on the Cumulative Impact on the Global Economy of Proposed Changes in the Banking Regulatory Framework* (June 2010) quantifies the potential impact.

Both the BCBS and the European Insurance and Occupational Pensions Authority have recently released results illustrating the impact of proposed new regulations. Each of these studies, however, has been conducted somewhat independently, without regard to the effect each will have on the other. Before entering a new world of regulation, regulators need to address how sectors and the measures applied to them will interact under the new regimes. This requires deep analysis of the incentives faced by institutions in each sector (as issuers of obligations and as purchasers of obligations in the markets), and analysis of how the changes to those incentives are likely to affect the structure and behavior of markets generally. Without such an understanding, it is possible that the very regulations which were designed to prevent another financial crisis may unintentionally prove a destabilizing force. We see this as a key role for the FSB and would welcome the opportunity to work with them in this important endeavor.

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