A WELL-INTENTIONED FOLLY: THE MACROECONOMIC IMPLICATIONS OF SOLVENCY II

Amarendra Swarup

In January 2014, the European Union will introduce a new piece of insurance regulation, Solvency II. Its implementation will represent the latest pinnacle in the prescriptive approach adopted by EU regulators towards the insurance industry in their efforts to reduce risk and increase policyholder protection. It is also likely to become, in due course, the latest case study in the law of unintended consequences.

Keywords: Solvency II, European Union, insurance regulation, risk.

Introduction

Insurance facilitates the transfer, aggregation and management of risks and is a vital part of a modern economy. It allows individuals and companies to mitigate uncertainty, formulate long-term plans and invest accordingly. At the same time, the aggregation and investment of premiums – effectively forming the savings of policyholders – facilitates an efficient allocation of capital throughout the economy.

These savings can be channelled into sectors needing large dependable amounts of investment, often in return for set cash flows to meet future claims. In particular, it is unlikely that the corporate bond market and other fixed-income sectors could have developed to the extent they have without the presence of savings aggregators such as insurance companies and pension schemes. Life insurance companies – the largest segment of the insurance sector – have limited liquidity requirements and, therefore, have been keen providers of longer-term capital to the economy.

The success of this model and its importance to the global economy is reflected in the size of the insurance sector. Insurers globally own $20 trillion in assets (IMF, 2011a) and form one of the largest groups of institutional investors. European insurers account for almost half of these assets (CEA, 2011).

The ubiquity of insurance across individuals and firms today and its pervasiveness means that it has both economic and social dimensions, much like banking. This has meant that over the centuries since its advent, the state has shown a keen interest in the regulation of the insurance industry.

This regulation has typically evolved down two strands: regulation of the sale of insurance products and regulation of the solvency position of insurers. The first is motivated by the likely asymmetry of information between the contracting parties, particularly for retail customers, who may be expected to have less knowledge and financial sophistication than the insurer. The second is driven by the desire to mitigate disruption to the wider economy if an insurer were to fail and the risk transfer mechanism underpinning a range of basic transactions suddenly prove inadequate.

For the purposes of this article, we shall focus only on the second strand. We briefly outline the economic arguments for insurance regulation and how they were perhaps best encapsulated in the 1870 Life Assurance Companies Act. We consider the increasing prescription of insurance regulation – illustrated by the Solvency II process – and the specific problems created in this most recent instance, particularly for the wider economy. The vague proposals to expand this to pension funds are touched upon. We conclude with a brief examination of why Solvency II is inherently flawed and likely to increase the risk of future crises.

Arguments for insurance regulation and the 1870 Life Assurance Companies Act

The rationale for insurance regulation evolved during the 19th century in the United Kingdom, alongside the development of the insurance industry (Booth, 2007). More recently, discussion has been limited and often linked to comparative analysis with banking regulation. The core argument has remained unchanged: markets may fail and cause financial crisis across both (e.g. Spulber, 1989; Viscusi, Harrington and Vernon, 2000). Some have argued that the two sectors should be regulated more consistently (e.g. Davies, 2003; Muir and Waller, 2003). Others have noted that banks fulfil a liquidity transformation role that lays them open to the risk of 'bank runs' (Diamond and Dybvig, 1983) while insurance firms are rarely exposed to such risks (Booth and Morrison, 2007).

From a solvency perspective, there are two key arguments for insurance regulation. Firstly, there will always be an asymmetry of information between the insurer and the insured party. This is because, notwithstanding the most rigorous of underwriting processes and attendant paperwork, there are fundamental uncertainties in the profile of future claims, i.e. future liabilities. For example, a life insurer can only turn to historical evidence and statistical models to determine when insured lives may suddenly end and necessitate a payment to the bereaved. Thus, there is a fuzzy range of potential outcomes at best and hence a range of potential liabilities to be met. Future unknowns such as pandemics, advances in medical science, natural disasters and the like can result in further significant deviations to this fuzzy band of outcomes and result in unexpected and potentially large liabilities. Therefore, regulation may be needed to mitigate the adverse effect of these information asymmetries, and ensure that liabilities are prudently estimated.

Secondly, the widespread use of insurance in an economy is predicated on the assurance that it is 'safe'. In this sense, insurers are subject to the same dependence as banks on the qualitative metric of confidence for their future viability and profitability in the long-term.

Therefore, a key imperative is to make sure that insurance companies can pay their claims, i.e. that the contracts entered into are honoured. This requires addressing the asymmetry between insured parties and insurers – the former may face challenges in judging the financial strength of the latter – and also, the management of assets and liabilities by insurers.

Insurance is subject to the laws of supply and demand like all services, but it is perhaps unique in that it is worthless if sold too cheaply. Returning to our example of the life insurer, the firm needs to sell the policies at a high enough price to pay out in the event of an unexpectedly large number of claims. Conversely, competitive pressures dictate that prices need to be low enough to attract customers.

As a result, many insurers walk a fine line between the two, their level of prudence often being reflected in both the estimation of their tail liabilities as well as the assumptions around the return and risk of the assets in which the premiums will be invested. However, these can be very different and may also be complicated by time inconsistency, i.e. the asset composition and underlying assumptions may change over time from when the premiums were first calculated and collected. The need to standardise or to differentiate between the strong and the weak is often cited as another strong argument for regulation.

What is common to the above arguments is the disruptive effect of gaps in information and the importance of filling these in. This information disclosure can then help ensure that contracts are understood, allowing market forces to rapidly delineate between strong and weak insurance firms, and increase the likelihood of contracts being honoured. Leaving aside wider arguments as to state-mandated versus private sector regulation for another day, it is likely that the most desirable form of regulation is one focused on transparency with some form of compulsory disclosure.

Arguably, the 1870 Life Assurance Companies Act achieved this objective succinctly. Coming in the aftermath of a rapid growth in the UK insurance industry and the resulting increased competition (Pearson, 2002), it was triggered by the insolvency of two British insurers in the 1860s (Barrow and Ferguson, 1984). The Act required life insurance companies to publish some limited information on their solvency positions to the market and the bases on which the positions were calculated. The focus was on communication and transparency to the market so as to safeguard policyholders' interests whilst still maintaining commercial freedom – the doctrine of 'freedom with publicity', which guided the prudential regulation of life insurance companies in the UK for many decades. It is notable that in the subsequent 75 years, there were only two minor insolvencies in the life insurance industry – neither of which had any impact on public confidence in the insurance industry.

The evolution of insurance regulation and the EU role

It is an unfortunate truism that the reaction to every financial crisis is the clamour for more and 'better' regulation. The vaunted innovations of the preceding boom – stocks, sovereign debt, derivatives and mortgages – that facilitated the euphoria are scrutinised, demonised and finally rehabilitated through regulation. The hope is that this regulation will provide lasting solutions and create a utopian world where economies are no longer subject to the vagaries of boom and bust.

But hope is not a strategy. The introspection needed is often sorely lacking and these myopic mutterings can often ignore key structural issues such as layers of opacity or bureaucracy that may have contributed. The human element is also rarely discussed or addressed. One forgets that states and regulators are also composed of people with differing biases and incentives. Regulation does not prevent future crises. Sheathing the sword does not make it any less dangerous – it only presents the illusion of doing so, without addressing the underlying causes.

The 20th century has been typified by the growing prescription of insurance regulation. The early years saw a requirement for life insurance companies to disclose further financial information and with greater regularity. Meanwhile, greater reliance was placed on the role of actuaries as safeguards. Following the Insurance Companies (Amendment) Act 1973, the prudential regulator was given more oversight of the financial returns submitted by insurance companies.

Subsequently, the need to judge that adequate levels of solvency capital were being maintained was added to the remit.

The advent of the European Union has had a further impact due to the desire to create a common market governed by common principles and harmonise insurers across Europe. The Third Life Directive required EU insurance companies to publish their solvency position and hold a minimum margin of solvency, both calculated according to the same particular method. This prescription eventually led to the use of a static published basis and method (known as Pillar 1) for UK insurers. The resulting inability of valuation and risk capital estimation methods to progress and adapt to changing levels of sophistication was cited as a key reason for the Equitable Life fiasco.

It is worth noting that, over time, the prescribed regulatory risk capital has become sacrosanct and insurance companies now typically hold surplus capital as a management buffer, to mitigate the need to use the prescribed risk capital in the event of any volatility. This runs the risk of changing the incentive from economic prudence to regulatory capital arbitrage, to minimise the risk capital and preserve profitability, which in turn raises systemic risk, as the same assets are replicated in insurance portfolio after insurance portfolio. As we note later, Solvency II does not remove this risk, although it does attempt to provide a mechanism whereby the risk capital can be actually used.

A brief overview of Solvency II

Since 2000, the discussion has focused on updating these common regulatory requirements and outlining them in more detail – a process known as Solvency II (see, e.g. Muir and Waller, 2003; CEA and Tillinghast, 2006; Cruz, 2009 for discussions of the regulation as it has evolved over the years). Originally envisaged as being in place for 2008, the timeline has moved outwards and Solvency II is now expected to come in on 1 January 2014.

From a regulatory perspective, the recent financial crisis has hastened the move towards a prescriptive regime. In November 2008, the European Commission set up a High-Level Group chaired by Jacques de Larosière to make recommendations on 'how to strengthen European supervisory arrangements with a view to better protecting Union citizens and rebuilding trust in the financial system'. The final report, presented on 25 February 2009, recommended, amongst other reforms, a European supervisory authority for insurance and occupational pensions as well as a European Systemic Risk Council (de Larosière, 2009). These were adopted in November 2010 by the European Parliament and Council, establishing the European Insurance and Occupational Pensions Authority (EIOPA) and with the goal of formulating a single European rule book applicable to all insurance companies in the internal market.

For the purposes of this article, the first pillar of Solvency II outlines the capital requirements for all insurance companies within the EU at two levels: the Minimum Capital Requirement (MCR) and the Solvency Capital Requirement (SCR). The MCR is a minimum capital threshold below which insurers can no longer write new business, while the SCR is the target level of capital that insurance companies should maintain. This level of capital is deemed to be sufficient to match their liabilities at a confidence level of 99.5 per cent over a one-year horizon. Between the two capital levels are a series of triggers and escalation actions to be taken by the insurance company in question and the local regulator.

The SCR may be calculated by using either the standard formula or an internal model. The former is laid out clinically within the regulation whilst the latter is unique to a specific insurer and needs to be approved by the local regulator. Both take a holistic view of the whole balance sheet, including assets and liabilities. The bar for the internal model is high and requires considerable in-house expertise, resources and cost. It is likely, therefore, that the majority of insurers will opt for the standard model or choose to model only selective parts internally. It should also be noted that, while the internal model is likely to result in lower overall capital requirements (the main impetus for those that have chosen this route), the recent scrutiny applied to the regulatory and financial professions imply that the deviations will be quite small in practice.

The impact of Solvency II

Solvency II is well intentioned. The harmonisation of insurance companies across the EU is meant to increase transparency by giving the market consistent information. The standard formula is intended to ensure that adequate provision is made for risks. The use of a sliding scale between the MCR and SCR provides a mechanism whereby the risk capital can actually be used without fear of regulatory sanction. The requirement for every insurer to perform an ORSA (Own Risk and Solvency Assessment) is meant to instigate a regular bout of careful introspection and better judgement of business risks. Most importantly, the regulation is intended to uncover the economic volatility in the balance sheet of insurers by moving them all onto a mark-to-market basis and, thereby, provide a better means of assessing and ultimately improving their financial adequacy (DG ECFIN, 2007).

However, Solvency II is poorly executed and may have a whole host of unintended consequences for the wider economy, as noted by others (e.g. IMF, 2011b). The prescriptive overlay creates perverse incentives as insurance companies seek to optimise their portfolios to have as low a capital charge as economically possible, retain competitiveness in the marketplace and, therefore, maximise return on equity. This leaves a regulation, an industry and a wider economy riddled with future problems. We outline some of the key ones from our perspective below.[1]

Sovereign and pseudo-sovereign risk

Any European Economic Area (EEA) sovereign bonds issued in the local currency have a 0% capital charge (see Figure 1). In other words, they are deemed to be risk-free. Therefore, by this metric, Greece, Spain, Portugal *et al*. are at no risk of default and have negligible volatility – a stretch in light of recent events. The same applies to other government-backed or supranational bonds, such as those issued by the European Investment Bank (EIB), whose risk is

	EEA Sovereign Debt, ECB and supranationals (in local currency)	Other Sovereigns and EEA debt denominated in other currencies						
DURATION	All ratings	AAA	AA	A	BBB	BB	B or less	Not Rated
1	0.00%	0.00%	0.00%	1.10%	1.40%	2.50%	4.50%	3.00%
5	0.00%	0.00%	0.00%	5.50%	7.00%	12.50%	22.50%	15.00%
10	0.00%	0.00%	0.00%	11.00%	14.00%	25.00%	45.00%	30.00%
25	0.00%	0.00%	0.00%	27.50%	32.20%	32.50%	45.00%	36.00%

Figure 1: Proposed regulatory capital charges under Solvency II (QIS5) for sovereign and supranational debt of varying ratings and durations.

perceived to have risen in the aftermath of the announcement of the European Financial Stability Fund (EFSF) programme.

While some have argued that the risk should be picked up through the risk self-assessments that every insurer is required to do, there will be a range of perceived risks and a lack of clarity over how much additional risk capital to hold. The incentive is to hold less as, otherwise, insurers would potentially hamper their competitiveness. Even if the risk of default is ruled out, the impact of mark-to-market volatility can be significant, particularly when one considers the quantum of these assets held. The ECB's Financial Stability Review in June 2011 indicated that the insurance and pension sectors jointly held about €1.1 trillion of debt securities issued by euro area governments – about 16 per cent of their total financial assets. The percentage is almost certainly higher for the insurance industry in isolation.

It is worth noting that there has been some discussion about changing the rules to take account of the credit risk of particularly weak sovereigns (ECON, 2012) but at this stage, no proposals have yet been put forward. Given the political sensitivities involved, any changes here are likely to be the subject of intense lobbying and negotiation, which is unlikely to address adequately the concerns above. While some insurers with internal models have already taken provisions against sovereign defaults by some countries such as Greece and Italy, the economic incentive created by the above will be to compensate elsewhere in the model so as to ensure that overall capital requirements are not much higher and the firms in question remain competitive.

Banking regulation and bank bonds

The incoming Basel III regulation for banks is focused on extending the duration of bank funding and the amount of capital held. However, under Solvency II, the capital charge applied to credit is proportional to both its rating and its duration (see Figure 2). Therefore, lower-rated bonds and longer-duration bonds are less attractive. The one exception is AAA-rated covered bonds issued by banks, which attract a capital charge lower than that of the equivalent rated corporate bonds, particularly for the highest ratings. There are indications that AA-rated covered bonds may also benefit from a preferential capital charge in the next iteration of the standard formula.

This creates several problems. Firstly, insurance companies will be looking to shorten the duration and increase the quality of their credit portfolios to optimise capital under Solvency II, in opposition to the intentions of Basel III. Covered bonds will become increasingly attractive to the exclusion of the wider corporate bond market. For smaller or weaker banks, they could end up being the only form of financing that one of the largest purchasers of financial debt is willing to accept. Some elements of this can already be observed in the vast amounts of covered bonds issued by European banks in 2011 and 2012 to date. The growing reliance on a single source of bank funding to the near-exclusion of others, particularly for weaker banks, will reinforce the fragility of the banking sector.

There is an additional problem associated with this. Covered bonds are secured against pools of financial assets owned by the banks, typically mortgages or public sector loans. The rating is dependent on the extent of over-collateralisation in the assets backing the bond. Thus, increases in issuance here will lead to a hollowing out of the bank's balance sheet to support these growing demands for backing assets.

Alongside this, in the event of any default, the holders of covered bonds are protected by their collateral and in the event that this is insufficient, their residual claim typically ranks *pari passu* with senior unsecured creditors. Thus, their ultimate recovery rates will be higher while other senior unsecured creditors will now have lower recoveries than before, as the pie will be no larger.

The net result is a weakening of the covenant for senior financial bonds and those further down the capital structure. The likely result is an increase in the cost of capital for banks and potentially a weakening of the associated ratings. There may be a 'sweet spot' as yields rise where insurers may find themselves drawn to shorter duration senior financial bonds due to the perceived higher return on capital. However, this

	Covered bonds	Corporate bonds						
DURATION	AAA	AAA	AA	A	BBB	BB	B or less	Not Rated
1	0.60%	0.90%	1.10%	1.40%	2.50%	4.50%	7.50%	3.00%
5	3.00%	4.50%	5.50%	7.00%	12.50%	22.50%	37.50%	15.00%
10	6.00%	9.00%	11.00%	14.00%	25.00%	45.00%	60.00%	30.00%
25	15.00%	22.50%	27.50%	32.20%	32.50%	45.00%	60.00%	36.00%

Figure 2: Proposed regulatory capital charges under Solvency II (QIS5) for covered bonds issued by financial institutions and private sector corporate debt of varying ratings and durations.

will only exacerbate the longer-term problems for banks as they will find it harder to issue subordinated debt at an economical price.

Lastly, it is worth noting that both the Vickers Commission and Basel III envisage a large fraction of the additional capital requirements for banks being raised in the form of bail-in bonds, which convert to equity in the event of a crisis. These will be anathema to insurers under Solvency II – the need to hold capital against a 1 in 200 year event effectively means that the presumption is that the bond will convert to equity under any given scenario and therefore, will be treated as either a junk bond or pseudo-equity, attracting a much higher capital charge. Therefore, banks will have a significantly reduced pool of investors willing to accept these bonds.

Systemic risk

There is also the problem of increased systemic risk. The recent financial crisis has led to a convergence of sovereign and financial bonds, as many banks have come to rely on the sovereign guarantee in some form for their continued survival and access to funding at a reasonable level. Therefore, a move towards both sovereign debt and covered bonds from banks implies an aggregation of highly correlated risks that will behave essentially the same in any adverse scenario over the next few years. Any move into senior financial bonds will only compound this.

The result will be to intertwine the sovereign and financial sectors – both banking and insurance – even more closely than before. Few would argue that this is desirable, both from the perspective of economic stability and also because political and macroeconomic objectives must inevitably clash. One can see elements of this problem already in the pressure on banks to deleverage and reduce their balance sheets on the one hand, whilst also boosting lending to key political sensitivities such as small and medium-sized businesses on the other. The logical end point of such sovereign dependency is a financial system nationalised in all but name through these proxies. History reminds us that these typically have a poor track record at providing growth.

It should also be noted that, under Basel III, government bonds are also particularly attractive to banks. Therefore, the increased demand for government bonds from both banks and insurers has implications for the future demand for and yield of European government bonds. These distortions – though likely to be beneficial for sovereign issuers in Europe – also represent, however, a potentially pervasive financial repression that distorts the natural structure of the yield curve, prevents the timely deleveraging of sovereign debt and potentially creates future bubbles through the provision of artificially low interest rates.

Further, any artificial suppression of the yield curve will also artificially inflate perceived liabilities in the present day (as the yield curve is one of the inputs used to discount future liabilities). This exacerbates the regulatory capital and solvency strain for insurance companies, and can create a vicious circle as they seek to arbitrage the rules even more to optimise their capital.

Additionally, the use of common formulae increases the likelihood of insurers crowding into similar asset classes and even similar instruments, as any attempts to optimise capital will lead to very similar asset allocations. Even where internal models are used, the likely pressure to benchmark against the standard model will lead to similar biases. This raises the risk of disruptive dislocations if large parts of the insurance industry attempt to move out of an asset class at once. When something goes wrong, the result may be greatly amplified and systemic.

Regulatory arbitrage

Regulation inevitably creates new opportunities for arbitrage. The confluence of Basel III and Solvency II is no exception. The need to shift high risk-weighted assets (e.g. bank loans, lower rated asset-backed securities, structured products etc.) off bank balance sheets, coupled with the need for insurers to find yield at a capital-efficient price, has created such an opportunity.

Collateralised funding trades are a private bilateral form of a covered bond. The insurer enters into a multi-year transaction with a bank, where the bank takes legal ownership of a portfolio of government bonds from the insurer. In return, it pays an attractive yield to the insurer and provides security against the loan in the form of high risk-weighted assets, typically on an over-collateralised basis.

The arbitrage is simple. The bank now has government bonds on its balance sheet and has reduced its capital needs. The insurer has secured an over-collateralised loan from a bank, where it attaches a small capital charge to take into account the residual counterparty risk. The yield paid means that the return on capital is now improved.

But this carries enormous risks. The collateral is highly correlated with the bank counterparty. In the event that the bank were to run into trouble, the collateral is also likely to be impacted significantly – particularly given its nature – leaving the insurer nursing painful losses. Systemic risk is also enhanced as such a trade intertwines banks and insurers even more closely, making contagion a more likely outcome than before.

Impact on wider markets and firms

As insurers optimise their capital under the new rules, large amounts of assets will move around the market. This can cause significant dislocations, particularly if people rush to purchase or sell at once and in the light of a volatile environment going forward. The delays in Solvency II and the fact that most insurers are only going to know next year if their internal models are approved increases the risk of these problems.

It is also worth noting that the bias towards sovereign debt means that any increase in allocations here will result in less money flowing into other parts of the market. The move towards shorter-dated and higher-rated credit may also have ramifications. Insurers are a key part of the long-term corporate bond market and provide stability of funding at an attractive cost of capital to many firms. Any move out will either shrink the available finance or raise the cost of capital,

as the market offers higher yields to compensate for the higher capital requirements. Both avenues are a drag on economic growth, reduce the productive allocation of capital in the economy and increase uncertainty for many firms. We also note that small and medium-sized businesses are likely to be disproportionately affected as they are either lower-rated or unrated. Utilities and infrastructure companies that look for long-term financing will find additional difficulties. That does not bode well for the UK government's attempts to encourage more investment into infrastructure.

Securitisation

The popularity of securitisation and the use of off-balance-sheet vehicles by banks in the run-up to the last financial crisis was driven by an attempt to minimise capital charges by moving penal assets from a capital perspective off the balance sheet. Solvency II promises something similar for insurance companies.

The need to reduce capital charges will increase the use of reinsurance by insurance companies. Reinsurers in turn are also likely to issue more insurance-linked securities such as catastrophe bonds to manage their own risks. While sensible in motivation, the net effect will be to spread risk out further amongst a larger pool whilst hiding the complex web of interconnections under new layers of opacity and obscurity. This increases the fragility of the financial market and increases the risk of contagion further.

Increased barriers to entry and reduced competition

One of the largest impacts Solvency II will have on the insurance industry is cost. Implementation costs are already a large expense for many insurers, particularly those looking at developing an internal model, and ongoing costs are also likely to be large. The European Commission's estimate for implementation costs was €3bn while recent surveys (see, for example, PricewaterhouseCoopers, 2010) have indicated that this estimate is on the low side. As an example, Lloyd's of London expects implementation to cost £250 million, while ongoing expenses are estimated to be £60–70 million per annum. Other costs will also have to be factored in, such as the relative lack of suitably qualified staff, which is already causing wage inflation, and the cost of regulation going forward, which local regulators will extract in the form of levies from the industry.

The cost of capital will also rise due to the increases in regulatory capital that many insurers will face under the new rules, thanks to the increase in balance sheet volatility and the ongoing costs of coping with a more complex regime. Any reductions will be greater for insurers with internal models or those with multiple lines of business that can diversify across these. Both favour large insurers and will lead to an uneven competitive landscape. Mergers and acquisitions are likely to rise in this environment as economies of scale and having multiple lines of business become advantageous. The likely result is, therefore, less choice and higher costs for policyholders.

Increased regulatory inefficiency

Solvency II has enormously increased the burden for local regulators, which has been compounded by the creation of a new pan-European super-regulator, EIOPA.

Apart from the costs of this new regulatory system, which will ultimately be borne by policyholders, there is also an increased likelihood of regulatory failure. The information asymmetry now resides between the insurer and the regulator, who will receive an enormous volume of complex detail that will need to be assimilated, aggregated and reduced to the identification of risks for both the insurer and the industry. Simply put, the potential for nascent problems to go unnoticed amongst all this detail until too late will be significantly larger.

Coupled with the need to put together rapidly a sizeable staff who can adequately understand all of this in a timely fashion and be able to anticipate relevant developments, European regulators run the risk of creating a large rod for their own backs. Some evidence of this can already be seen in the recent move of the implementation deadline from 1 January 2013 to 1 January 2014, and the lack of any final detail yet on the technical aspects of the regulation, despite interminable debate.

Conclusion

In recent months, there have been murmurings about extending Solvency II to pension funds. The intention again may be laudable – pension funds, in general, suffer from a lack of transparency and harmonisation around core risk drivers such as longevity assumptions and how liabilities are discounted. There is the additional complication that, particularly under the old defined-benefit pension regime, there was no free market in pensions as employees joined the scheme offered by their employer, so transparency alone is unlikely to be enough to regulate the market adequately. Given their pivotal role in the economy as the second largest source of long-term savings aggregation after insurance companies, it is intriguing that their asset-liability management and solvency has not been higher on regulatory agendas.

However, in its current form, any attempt to apply regulation of a similar nature to Solvency II to the pension fund industry would be a further disaster. It would compound many of the issues touched on above, as pension funds are second only to the insurance industry in terms of asset size. Many of the key players in an economy – the sovereign, banks, insurers and pension funds – would all become far more closely interlinked, with all the implications that this yoking together would have for financial contagion and the fragility of the financial system.

The additional problem is that current regulation, particularly in the UK, places the onus for any shortfalls in funding on the corporate sponsor of the pension scheme. Any attempts to increase this burden through the advent of some form of regulatory capital and enforced solvency criteria will divert valuable cash flow away from the corporate sector. It will also lead to increased tensions between shareholders and pension funds, especially given the general underfunded state of pension funds. All this will reduce investment in the

short-term and provide an additional drag on economic growth at a time when few can afford it. A better route may well be to reverse the direction of pension fund regulation in recent years and allow more risk sharing between sponsor and member when a scheme runs into trouble. The legal status of pension funds, though, suggests that regulation should not be carried out at an EU-wide level.

We have stated and illustrated above why Solvency II is inherently flawed as an approach. It interrupts the valuable role played by insurance companies within the wider economy. By raising the cost of capital for the industry as a whole, it increases the cost for others to mitigate uncertainty and formulate long-term plans. The unintended shifts in incentive structures for insurers and their likely responses to optimise capital in response will curtail the provision of longer-term capital to the economy and emasculate the valuable role that savings aggregators play in fuelling growth. None of this bodes well for future growth in the European economy.

We noted earlier that the key imperative to any regulation should be to tackle the disruptive effect of gaps in information and facilitate information disclosure, so that the likelihood of contracts being honoured is increased. Solvency II fails on this account. The complexity only obscures the landscape further and turns a well-intentioned exercise in harmonisation into a comprehensive and unintended manipulation of business incentives and investor preferences. This artificial distortion of insurance rates and the wider yield curve only increases the cost of capital for the economy as a whole. Even worse, it increases the fragility of the financial system and sows the seeds of future financial crises by forcing the majority of players in the economy into the same Faustian pact with sovereigns, whereby they all swim or sink together going forward.

1. It should be noted that, for the purposes of our analysis, we have used the last official calibration of the standard formula produced by EIOPA during the QIS5 exercise (EIOPA, 2010). Any indicative changes since then are noted where appropriate.

References

Barrow, G. E. and G. G. R. Ferguson (1984) 'A Review of the Law Relating to Insolvent Life Insurance Companies and Proposals for Reform', *Journal of the Institute of Actuaries*, 111, 448, 229–257.

Booth, P. M. (2007) 'Freedom with Publicity – the Actuarial Profession and Insurance Regulation from 1844–1945', *Annals of Actuarial Science*, 2, 1, 115–146.

Booth, P. M. and A. Morrison (2007) 'Regulatory Competition and Life Insurance Solvency Regulation in the EU and the USA', *North American Actuarial Journal*, 11, 23–41.

CEA (2011) *CEA Statistics N°44: European Insurance in Figures*. Available at: http://www.insuranceeurope.eu/uploads/Modules/Publications/european-insurance-in-figures-2011.pdf (accessed 06 May 2012).

CEA and Tillinghast (2006) *Solvency II Introductory Guide*. Available at: http://www.insuranceeurope.eu/uploads/Modules/Publications/Solvency per cent20II per cent20- per cent20Introductory per cent20Guide.pdf (accessed 14 April 2012).

Cruz, M. (ed.) (2009) *The Solvency II Handbook*, London: Risk Books.

Davies, H. (2003) 'Managing Financial Crises', in P. Booth and D. Currie (eds.) *The Regulation of Financial Markets*, 26–43. London: Institute of Economic Affairs.

DG ECFIN (2007) *Impact Assessment: Possible Macroeconomic and Financial Effects of Solvency II*. Available at: http://ec.europa.eu/internal_market/insurance/docs/solvency/impactassess/annex-c06_en.pdf (accessed 20 April 2012).

Diamond, D. W. and P. H. Dybvig (1983) 'Bank Runs, Deposit Insurance and Liquidity', *Journal of Political Economy*, 91, 3, 401–419.

EIOPA (2010) *EIOPA Report on the Fifth Quantitative Impact Study (QIS5) for Solvency II*. Available at: https://eiopa.europa.eu/fileadmin/tx_dam/files/publications/reports/QIS5_Report_Final.pdf (accessed 12 April 2012).

International Monetary Fund (2011a) *Global Financial Stability Report: Grappling with Crisis Legacies*, Washington, DC: International Monetary Fund.

International Monetary Fund (2011b) *Possible Unintended Consequences of Basel III and Solvency II*, Working Paper No. 11/187, Washington, DC: International Monetary Fund.

Committee on Economic and Monetary Affairs (ECON), European Parliament (2012) *Committee Report Tabled for Plenary, 1st Reading/Single Reading – A7-0077/2012*. Available at: http://solvencyiiwire.com/solvency-ii-news-european-parliaments-approved-text-on-omnibus-ii-a7-00772012/19483 (accessed 28 April 2012).

de Larosière, J. (Chair) (2009) *Report of the High Level Group on Financial Supervision in the EU*. Available at: http://ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf (accessed 15 April 2012).

Muir, M. and R. Waller (2003) 'Twin Peaks: The Enhanced Capital Requirement for Realistic Basis Life Firms', paper presented to Staple Inn Actuarial Society, London, UK. Available at: http://www.sias.org.uk/data/papers/TwinPeaks/DownloadPDF (accessed 20 April 2012).

Pearson, R. (2002) 'Growth, Crisis and Change in the Insurance Industry: A Retrospect', *Accounting, Business and Financial History*, 12, 3, 487–504.

PricewaterhouseCoopers (2010) *Getting Set for Solvency II*. Available at: http://www.pwc.com/gx/en/insurance/solvency_ii/countdown/ifrs_solvency_ii_implementation_europe.jhtml (accessed 17 April 2012).

Spulber, D. F. (1989) *Regulation and Markets*, Cambridge, MA: MIT Press.

Viscusi, W. K., J. E. Harrington and J. M. Vernon (2000) *Economics of Regulation and Antitrust* (3rd edn.), Cambridge, MA: MIT Press.

Amarendra Swarup is Fellow in Finance at the Institute of Economic Affairs (swarup@bobswarup.com).