Macroprudential Objectives and Instruments for Insurance – An Initial Discussion

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Abstract

This article seeks to contribute to the ongoing debate on the objectives of macroprudential policies and the interaction between micro- and macroprudential policy in insurance. We consider two channels through which the insurance sector could influence economic growth and link these considerations to the ongoing discussions on possible macroprudential concerns in the insurance sector. While we discuss some potential macroprudential objectives and instruments, they are put forward merely for discussion and illustration, and do not constitute, and should not be seen as, EIOPA policy proposals.

1. Introduction and motivation

The recent financial crisis exposed important shortcomings in financial supervision, in particular supervision and oversight of the financial system as a whole. Both academia and the supervisory community have therefore explored various macroprudential policies which address system-wide build-up of risk.

So far, discussions on macroprudential policy have focused on the banking sector due to its prominent role in the recent financial crisis. However, the thinking and policies explored for that sector are also strongly influencing the debate as it is starting to arise in other parts of the financial system, such as in the insurance sector. It is therefore important that any extension of this debate to the insurance sector reflects the specific nature and features of the insurance business.

This article seeks to contribute to the discussion of possible macroprudential strategies for insurance and briefly discusses how the policies and instruments frequently applied in the banking sector could be considered in the insurance sector.[26] It should be stressed, however, that there is currently no firm evidence on the need to

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[26] This topic is currently being discussed at different ESRB groups, where EIOPA is actively participating. The views expressed in this article, however, do not necessarily reflect the position of these groups.

have a banking-type macroprudential approach for the insurance sector, and more research in this field is clearly needed. Moreover, while Solvency II was not initially designed as a macroprudential framework, it does contain elements with a certain macroprudential dimension which we briefly highlight in this article. We consider that this interaction between micro- and macro-based regulatory regimes needs to be fully understood to avoid a situation where macroprudential instruments simply end up becoming add-ons to the micro-prudential regime.

The remainder of the article is structured as follows. Section 2 provides an overview of the currently policy discussions regarding systemic risk in insurance and its effects on the real economy. Section 3 presents a description of the framework and potential intermediate objectives of a macroprudential policy framework for insurance. Section 4, in turn, presents a set of instruments that macroprudential authorities could use to achieve the intermediate objectives. The last section concludes. A comprehensive overview of the framework described in this note can be found in Annex 1.

2. Systemic risk in insurance and its effects on the real economy

While it is generally accepted that systemic risk is inherent in the banking sector, the issue is more controversial in the case of insurance.[27] This paper does not go into the details of the debate, but briefly considers two aspects in order to set the scene for the discussion on possible macroprudential objectives and instruments. First, it explores how any failure of the sector to provide insurance services would have relevance for the real economy, i.e. how the insurance sector could be systemic in its own right. Secondly, it discusses how the insurance sector might be systemic due to its interlinkages and activities in financial markets.

The insurance sector could be systemic if a failure of the sector to provide insurance services would lead to serious negative consequences for the real economy. The extent of this would depend on the relationship between insurance provision and economic growth.

From a theoretical point of view, the provision of insurance by specialist undertakings may contribute to growth by taking on non-commercial risk, or by reducing the need for detailed and expensive contractual arrangements (e.g. bankruptcy procedures) in

[27] In the context of this article, systemic risk is considered "a risk of disruption in the financial system with the potential to have serious negative consequences for the internal market and the real economy", see article 2 of Regulation (EU) No. 1092/2010 on European Union macro-prudential oversight of the financial system and establishing a European Systemic Risk Board.

case an enterprise is affected by an insurable shock. Insurance therefore may facilitate trade and funding of others, and insurers may act as information hubs on the price of risk, improving overall resource allocation. Furthermore, as part of the financial system, insurers are important in enhancing financial intermediation and in pooling and mobilizing savings to provide funding for longer-term projects.

A number of empirical studies have tried to determine the economic importance of this link by estimating the relationship between the availability of insurance and real GDP growth. Arena (2006), for instance, uses data for 56 countries between 1976 and 2004 to show that both life and non-life insurance have a positive and significant effect on economic growth. Similarly, Lee *et al.* (2013) finds a long-run equilibrium relationship between real GDP and real life insurance premiums, based on a data set for 41 countries covering the years 1979 to 2007.

Despite this empirical link between the development of the insurance sector and economic growth, it is difficult to establish one-directional, causal relationships. Part of the reason is technical – identifying casual links empirically is challenging both in terms of model set up and in terms of the availability of suitable variables. In addition, some of the benefit of insurance provision may not lead to higher measured GDP, but instead provide welfare benefits in the terms of lower disutility of risk. There is, however, a certain amount of empirical literature seeking to more accurately assess the causal relationship, such as in Kugler and Ofoghi (2005) which do seem to point to a long-run positive causal relationship between insurance sector market size and economic growth. Moreover, a relatively recent study by Han *et al* (2010) provides evidence that that insurance development contributes to economic growth, but the relationship seems to be more significant for non-life insurance than for life insurance.

Overall, the available theoretical and empirical evidence seems to point to the existence of a causal link between insurance availability and economic growth. Such a relationship could support the argument that the sector as a whole may be systemic. With this interpretation, and provided that the link is found to be both empirically and economically significant, systemic risk in insurance would relate to the adverse probability that the sector as a whole becomes unable to provide certain lines of insurance (e.g. trade credit insurance) at reasonable prices.

The second channel via which insurers could be systemic is through its interlinkages and activities in financial markets. Compared to banks, however, the traditional business model of insurers does not rely on maturity transformation and generally involves very limited financial leverage as premiums are paid up-front. Liquidity risks

are also of a substantially lower magnitude in insurance, and there is no intra-insurance market comparable to the interbank market through which contagion can spread (CEA, 2010).

Moreover, while there are interlinkages between the insurance sector and other segments of the financial system by different means, e.g. holding intra-financial assets and liabilities, reinsurance or the use of derivatives, these links are usually limited by comparison with banks and some other financial institutions.

These factors contribute to the relative stability of the insurance sector.[28] Still, the work of the International Association of Insurance Supervision (IAIS) to identify individual globally systemic insurers is useful to understand potential sources of systemic risk in insurance.[29] The IAIS finds that insurance groups and conglomerates that deviate from their traditional business and carried out non-traditional or non-insurance activities (NTNI) were more vulnerable to financial market developments and more likely to amplify, or contribute to systemic risk (IAIS, 2011), and are more likely to be systemic.[30]

The particular way in which insurers may exert systemic significance as well as the differences in the transmission channels compared to banking, makes it challenging to consider a macroprudential policy that is relevant for insurers. If the IAIS measures for global systemically important insurers are considered to be mainly micro-prudential and target risk build-up within individual institutions to ensure that such institutions face incentives which are in line with potential societal costs of a failure, it is possible that any macroprudential concerns for insurers are also efficiently dealt with at the micro level. It seems, therefore, that the interplay between macro and micro regulation needs be carefully considered.

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[28] The lack of systemic relevance of traditional or main insurance activities is also widely accepted in the economic literature. See, for example, Geneva Association (2010).

[29] The current article starts from the work carried out by the IAIS when developing a macroprudential policy strategy for insurance. We are aware, however, that there are controversies around this idea.

[30] Against this background, the IAIS, under the auspices of the Financial Stability Board and the G20, developed an initial assessment methodology to explain the systemic relevance of insurance on the basis of their size, global activity, interconnectedness, NTNI activities and substitutability (IAIS, 2013a) and proposed a list of nine Global Systemically Important Insurers that will be subject to an integrated set of policy measures (IAIS, 2013b).

Macroprudential policy and its objectives

2.1 The interaction between micro- and macroprudential policy

Traditional micro-prudential supervision seeks to ensure stability at firm level, which is a necessary but not always sufficient condition for systemic stability. In contrast, the macroprudential approach calls for a system-wide perspective where the risks are assessed for the system as a whole and, on that basis, deriving policies for individual institutions within it (cf. Borio, 2011). The ultimate goal of a macroprudential policy is to achieve financial stability and avoid the negative consequences of financial distress on the real economy.

Although both policies are conceptually supplementary, a potential for policy conflict could arise. As explained by Mawdsley (2014) the conflict may take place in case of common instruments that can be used to achieve both microprudential and macroprudential objectives, which creates a coordination challenge for the competent authorities concerned.

In practical terms, this conflict, if unresolved, could generate a deadweight loss whereby requirements such as capital charges could be inefficiently accumulated creating an excessive burden for companies and resulting in an inefficient allocation of resources.

As pointed out by Osiński, Seal, and Hoogduin (2013), tensions are more likely to occur during the downturn phase of the cycle and at crucial turning points. These authors show that conflicts resulting from this interaction can be reduced by clarifying the different mandates, objectives, functions and toolkits. Information sharing, joint analysis of risks, and general dialogue between authorities can –among other things– also be helpful to reduce potential tensions, together with a certain institutional mechanisms to enhance policy cooperation and coordination.

In the context of insurance, the risk of emerging conflicts adopts an additional dimension. As there is no strong evidence on the need to develop a banking-type macroprudential approach for the insurance sector, policymakers need to develop a clear case and examine existing regulatory frameworks before considering a specific macroprudential framework in insurance. In this context, it is important to assess all aspects of regulation, not only capital requirements.[31]

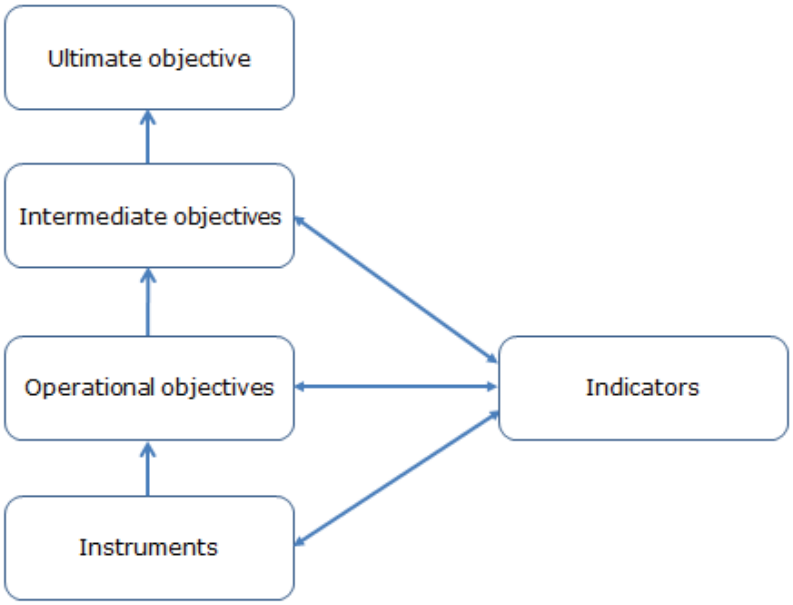
[31] In Solvency II terms, this would mean that all the three pillars of Solvency II would need to be considered.

Against this background, however, the next section presents a framework for thinking about macroprudential policy in insurance in order to stimulate further discussion on the possible objectives such policies could have for the sector.

2.2 A macroprudential framework

In order to establish a macroprudential framework for insurance, we consider an approach that draws on the existing literature[32] with a set of intermediate objectives, operational objectives and instruments as given in Figure 1.

Figure 1: A framework for macroprudential policy in insurance



In such a framework, the ultimate objective is financial stability and, by extension, economic growth. In order to achieve this, macroprudential authorities may want to focus on a set of intermediate objectives, which can be defined more clearly. Subsequently, macroprudential authorities may seek to influence these intermediate objectives by specifying certain operational objectives that can be more directly achieved by means of implementing or adjusting a set of properly calibrated instruments.

Finally, indicators play a crucial role in the macroprudential strategy as they allow an assessment of the extent of which the intermediate and operational objectives are

[32] See especially ESRB (2014a,b).

being met. Furthermore, they provide essential information for the calibration of the instruments.

The rest of this section covers the intermediate and operational objectives, while Section 3 considers a set of possible macroprudential instruments.

2.3 Potential intermediate and operational objectives for insurance

Intermediate objectives are typically linked to the ultimate objective, but more precisely formulated. For insurance, it would be natural to consider two simple intermediary objectives with a clear basis in current risk management practices: a) mitigating the likelihood of a systemic crisis to occur; and b) mitigating the negative impact in case such a crisis finally materialises. Both objectives represent a breakdown of the final objective.

The operational objectives usually exert their impact on both likelihood and impact of systemic risk. The extent, however, differs from objective to objective. Below, we will briefly discuss five potential operational objectives.

a) Ensure sufficient loss absorption capacity and reserving

Insurance is essentially a business concerned with taking on and managing risk. Insurers' technical provisions are designed to account for future claims arising from insured events. They reflect the best estimate of future claims and a risk margin intended to ensure that insurers are able to fully pay the claim of the last policyholder.

Losses which, for some reason, exceed the provisioning (including the risk margin) would need to be covered by capital in the form of own funds, so that even in an adverse scenario, insurers' obligations to policyholders continue to be met. Insurers are therefore required to hold a certain amount of capital (e.g. the Solvency Capital Requirement in Solvency II) in the form of eligible own funds.

As explained by Plantin and Rochet (2007), insufficient reserving or lack of adequate capital would lead to insurance defaults in adverse scenarios. Under-reserving or under-capitalisation therefore increases the likelihood of a default in a single institution or in several institutions in case of shocks that affects the whole insurance sector. Furthermore, systematically insufficient loss absorbency capacity and reserving for insurance risk would increase risks of contagion and therefore the impact of a systemic crisis.

b) Avoid negative interconnections and excessive concentration

Interconnections are inherent to the functioning of the financial system. Insurers are financial intermediaries which operate actively in the financial markets and use infrastructures such as payment and settlement systems. Furthermore, they may be part of groups that include other financial institutions and banks.

For example, Billio *et al.* (2012) and Nyholm (2012) present evidence for the existence of relevant interlinkages between the insurance sector and other segments of the financial system by different means, e.g. holding intra-financial assets and liabilities, reinsurance or the use of derivatives. The more interconnected insurance is, the more likely is that an endogenous shock spills over to other segments of the financial system, and that an exogenous shock ends up affecting the insurance sector. At the same time, interconnections may also be beneficial to financial stability as networks of connected entities may disperse shocks and allow them to be absorbed by several entities instead of in a single entity.

Excessive concentration may occur if insurers increase their interconnection with other segments of the financial system. Insurers and, in particular life insurers are large institutional investors. Insurers in general often exhibit a conservative investment profile, focusing on certain asset classes such as government bonds, corporate bonds and, to a lesser extent, shares and other variable income products. This investment profile might, however, lead to excessive concentrations in certain asset classes or towards certain issuers. For example, insurers typically invest in local government bonds and in financial bonds. A recent ESRB report (2015) shows the existence of a significant home bias, which is explained by the fact that in 18 of the 28 EU countries, more than 50% of the domestic and euro area sovereign debt holdings of the insurance companies covered in the study are accounted for by domestic sovereign debt.

The higher the concentration towards certain issuers, or certain segments of a market, the more likely it is that financial distress in one counterpart or in one sector will spill over to insurers. Moreover, losses due to one failed counterpart would be larger the higher the concentration. Substantial concentration in investments therefore increases the likelihood of a systemic crisis and its impact.

c) Avoid excessive Non-traditional and Non-insurance risk taking

A key issue is when the natural interconnection becomes a negative interconnection for insurers. The answer to this question probably lies with the nature of the interconnections. In line with the IAIS work, one could consider that the negative interlinkages start from the moment in which insurers engage in NTNI activities. As stressed by IAIS (2011), insurance groups and conglomerates that deviated from their traditional business and carried out non-traditional or non-insurance activities (NTNI) were more vulnerable to financial market developments and more likely to amplify, or contribute to systemic risk.

d) Limit procyclicality

The potential procyclical effects of the insurance sector are usually considered to arise due to insurers' role as large institutional investors. At least in principle, potential herding behaviors and fire sales by insurers may exacerbate market price movements. In a recent discussion paper, the Bank of England (2014) investigated the issue of procyclicality of investments by insurance companies and pensions funds in the UK. They found some evidence of procyclical investment behaviour by insurance companies both internationally and in the UK.[33] For the Netherlands, Houben and van Voorden (2014) analyze the data on the trading activities and the asset mix of insurance companies during the financial crisis, concluding that there was a certain procyclical investment behavior that not only undermines the insurers' returns and accentuates swings in financial markets in a self-reinforcing manner. Impavido and Tower (2009) consider that the equity markets fall in 2001-2003 provide evidence that insurance companies contributed to a downward spiral in markets when they sold equities seeking to bolster balance sheets which, in turn, led to further declines in the market. Such procyclical effects might need to be avoided in order to mitigate the likelihood of a systemic crisis and its impact.

e) Avoid moral hazard

Moral hazard relates to the discussion that is commonly framed in the context of being "too big to fail". As stressed by the ESRB (2014a,b), misaligned incentives and moral hazard include risks associated with systemically important financial institutions and the role of implicit government guarantees. The expectations that systemic institutions will be rescued in case of non-viability to avoid a disruption of the financial

[33] However, the authors note that while there is some evidence of procyclical shifts in asset allocation following the dotcom crash of the early 2000s, and to a lesser extent during the recent financial crisis, there are also structural shifts in asset allocation occurring during this period, which make identifying procyclical behaviour more difficult.

system may generate an excessive risk-taking behavior by those institutions. Although the case is stronger in banking due to the systemic implications of a bank failure, the issue could also apply to insurers. Claessens *et al.* (2012) are of the view that the policy decision to protect creditors that were taken in the recent financial crisis have amplified the overall cost, perpetuated the "too big to fail" problem and increased moral hazard in the financial system. While implicit and explicit government guarantees may provide a useful loss backstop and increase confidence in a financial institution (and possibly reduce the likelihood of a systemic crisis), excessive risk taking as a consequence of moral hazard would increase both the likelihood and the impact of systemic crisis.

3. Macroprudential instruments

The operational objectives listed above would influence both the likelihood of a problem occurring and the impact should a stress occur. Macroprudential authorities would need to complement these high-level operational objectives with a set of properly calibrated macro-prudential instruments relevant for insurance. This section discusses the types of instruments which may be explored for this purpose and provides a first assessment of the possible transmission mechanisms.

3.1 Loss absorption capacity and adequate reserving

Instruments usually considered in this field aim at increasing the resistance of institutions to withstand expected and unexpected losses, or to avoid fire sales. Such instruments could either be applied across-the-board or focus on certain institutions, such as the global or domestic systemically important insurers. It could also be tailored to specific risks, such as the low yield environment.

- Adjust the quantity and/or quality of the loss absorption capacity or regulatory capital requirements for macroprudential purposes. In general, such adjustments may be formed by additional risk bearing capacity compared to that required from a microprudential point of view (as this may be calibrated based on the risks faced by the insurer only), to make sure that undertakings internalize the social costs any failure would have on other stakeholders than policy holders. This approach has been taken in the banking sector as countercyclical capital buffers. However, such instruments need to be carefully calibrated and adapted to the microprudential regime in place (e.g. Solvency II in Europe) to avoid a situation where capital charges are improperly accumulated resulting in an inefficient allocation of resources. Alternatively, it might also be possible to consider an effective reduction

in required regulatory capital levels during stress to tackle macroprudential concerns of e.g. fire sales. This could, however, leave insurers vulnerable to further shocks.

- Increase the risk margin over best estimates for macroprudential purposes. As stressed above, in a market valuation environment, technical provisions are usually calculated on the basis of a best estimate and a risk margin. In Solvency II for instance, the risk margin is intended to reflect the cost of holding solvency capital (i.e. the SCR) in order to support the business under a run-off scenario. This ensures that the value of the technical provisions properly reflects the amount that insurance undertaking would be expected to require in order to take over and meet the obligations. However, from a macroprudential point of view, a buffer on this risk margin which was allowed to fluctuate countercyclically could also be considered. Such a buffer would then be partly linked to the riskiness of the insurers as the risk margin is linked to the SCR. There are, however, clear drawbacks to such an approach, a main concern being that it would severely obscure the valuation of technical provisions.
- Set up a leverage ratio. In principle, a leverage ratio is a simple instrument that could help preventing excessive leverage of institutions, thereby increasing their resilience. However, leverage is often defined as total assets to equity, which is arguably not the most relevant measure in insurance considering that it includes the "leverage" stemming from the fact that premiums are paid up-front. A leverage ratio in insurance would need to be tailored to exactly the type of leverage which is considered harmful, which could for instance be excessive leverage in the form of issued debt over equity. Currently, however, this is not a problem in insurance as leverage is not a major part of most insurers' balance sheet.

3.2 Interconnectedness and excessive concentration

While interconnections, and certainly reinsurance interconnections may help stabilize a system and distribute losses, negative interconnections especially stemming from NTNI activities may require a certain macroprudential response. This may especially be true if they increase intra-sector (i.e. intra-financial) interconnectedness. The following instruments are typically considered to deal with negative interconnections:

- Establishing limits, capital requirements or otherwise provide disincentives for excessive concentrations, by counterparty type:
  - Intra-financial concentration: Although intra-financial liabilities also increase interconnectedness, it would be difficult to limit the liability side since i) borrowing

–although rather exceptional in insurance– is mainly possible from financial institutions, and ii) the issuer of debt securities is generally not in the position to influence the identity of the ultimate holder of its debt. Therefore, disincentives to interconnections would most likely work at an aggregate level on the sum of lending to financial institutions and holdings of securities. However, as significant diversification is possible within the European or global financial sector, the relevant perimeter for such disincentives would need to be carefully considered (e.g. separating between different national markets).

▪ Government bonds: Sovereign debt has traditionally been considered as a relatively "risk-free" investment and often benefits from a preferential treatment in terms of capital requirements.[34] This fact, together with the –usually– high liquidity of these financial assets and their long-term maturity, leads to a high concentration by insurance companies, which may create systemic risk for the sector as a whole as the risk-free assumption is not likely to hold true. Macroprudential authorities should therefore consider the merits of incentivising insurers to diversify their portfolio and include government bonds from other jurisdictions.[35]

▪ Corporate bonds: a similar approach to the one described above could also be taken for corporate bonds. Large single exposures to certain corporate bonds considered as semi risk-free may also generate systemic risk under certain circumstances.

▪ Variable income instruments: inherently riskier than the previous asset classes, variable income instruments may provide diversification benefits in the portfolio of insurers, while achieving higher yields. Macroprudential authorities may, however, consider establishing limits on these asset classes to avoid a certain "search for yield" behaviour, especially to what refers to assets covering technical provisions.

▪ Bank deposits: insurers may hold significant amount of cash deposits in a given time. The funds collected by means of the premiums, together with the amount expected to be paid to claimants in the short term, may lead to a high single exposure to particular banking institutions. These exposures need to be assessed together with other exposures insures may have, such as equity or bonds.

[34] Note, however, that EIOPA has issued an opinion requesting NCAs to require that the risks related to Sovereign Exposures are appropriately taken into account in internal models (see EIOPA, 2015).

[35] This is discussed in extensive detail in ESRB (2015).

Macroprudential authorities may want to consider certain restrictions or ratios or other disincentives to avoid an excessive concentration in single banking institutions. [36]

- Separation of NTNI activities. Notwithstanding the aggregate limits on intra-financial exposures, separate regimes could be envisaged for NTNI activities such as repo transactions, securities lending and derivatives. However, as derivate holdings might be used for hedging purposes and risk-reduction, a distinction between such holdings and holdings for non-hedging purposes would need to be made.

Under Solvency II, some risks of excessive concentrations will be limited by concentration risk charges for single-name exposures (but not for sectoral exposures) which would help limit excessive concentrations and exposures. It is supplemented by the "prudent person" principle, by which undertakings shall only invest in assets and instruments the risks of which they can properly identify, measure, monitor, manage and control as well as appropriately take into account in the assessment of their overall solvency needs. When considering any potential macroprudential tools in this space, it is important to note that Solvency II, by policy design, does not include limits on concentrations, but instead rely on capital charges to adjust the incentive structure. Any predefined limits would enforce a very rigid structure that would limit firms' room to manage their balance sheets, and would need to be substantially justified if considered.

3.3 Non-traditional and non-insurance activities

NTNI activities have proven to contribute or amplify systemic risk associated to insurance. The IAIS has therefore developed a comprehensive framework trying to understand and categorize NTNI activities.37 Based on this work, three macroprudential instruments could be defined:

- Requesting higher (quantity and/or quality) loss absorption capacity to ensure that companies engaging in NTNI activities should hold an amount of capital that is in line with the risk they introduce into the financial system.

[36] Such restrictions are already imposed in some jurisdictions.

[37] This part draws on IAIS (2011) and, particularly, (2013a,b).

- Separating traditional from non-traditional activities to help in preventing the spill-over of detrimental effect caused by distress from NTNI activities on the traditional parts of the business.[38]
- Restricting/prohibiting NTNI activities (e.g. engaging in derivatives for non-hedging purposes or repo transactions and securities lending that go beyond the need for an efficient cash management).

We note, however, that NTNI activities are not always clear-cut (as noted above, derivatives are also used for risk-reduction purposes) and depend on the existing traditions and habits in the different jurisdiction. As such, we agree with the IAIS that the judgment of the relevant authority is very important. This has obviously an impact in the definition of relevant macroprudential instruments in each jurisdiction. In this line, any restriction or ban on certain activities and products should be carefully assessed. Moreover, before any proposals on limiting certain activities or investments can be made, the effectiveness of Solvency II to mitigate such risks must be carefully assessed. For instance, the credit risk charges will ensure that more capital will need to be held against more risky investments.

3.4 Procyclicality

Procyclicality in insurance generally relates to the asset side of insurers' balance sheet as insurers, being large investors, may contribute to price bubbles or collapses. This is different to banking, where procyclicality also stems from banks' contribution to the credit cycle. This difference means that any countercyclical instruments in insurance should relate to the investment behavior of insurers, in particular with a view to limiting potential fire-sales.

Although Solvency II is mainly concerned with micro-prudential supervision, there are several elements in the regulation which can be considered macroprudential, or which would have macroprudential effects. In particular, the volatility adjuster and the extension of the recovery period would work to limit procyclicality. The equity dampener also has some countercyclical elements as the capital charge increases (as a share of held equity) when equity prices are above a certain historical average.

However, while some of these elements are targeted towards limiting procyclicality, they are often considered to mainly apply in stress and work to reduce effective

[38] We are aware, however, that the concept of "effective separation" of activities is not easy from an operational and supervisory perspective.

capital requirements.[39] This may initially seem to contrast with the banking sector where the macroprudential tools also increase capital requirements in upturns. However, macroprudential instruments for the banking sector are also targeted towards the credit cycle, which might not be relevant for insurers.

Besides the instruments already in Solvency II, the following instruments are therefore likely to be considered in a debate on macroprudential tools:

- Allow regulatory capital requirements to fluctuate over the cycle: In a market-valuation environment, insurers may be relatively capital-endowed in good economic times (with high asset prices), and more capital constrained in distressed times (with lower asset prices and lower risk free rate). Macroprudential authorities could therefore require insurers to hold more capital compared to liabilities in economic upswings, and explicitly allowing for its discharge during distress. It is, however, important to note that it is far from certain that any countercyclical capital requirements in insurance should come in addition to micro-prudentially determined levels of capital. Macroprudential authorities would therefore also need to consider if countercyclical requirements could take the form of formal capital relief in distressed times, e.g. to avoid fire-sales.
- Extend the existing recovery periods: Insurers failing to meet supervisory capital requirements may be forced to sell assets to improve their capital position (especially in risk-based regimes). This could lead to pressures for fire-sales and procyclical behavior in economic downturns. Therefore, if the breach of capital requirements can be seen as temporary and the underlying business is deemed sound, an extension in the recovery period may be preferred compared to resorting to bankruptcy or fire-sales. Although this is mainly a microprudential tool intended to allow a degree of flexibility in determining how to best meet policyholder claims towards the insurer, it may also limit procyclicality and therefore could be seen in the domain of macroprudential policy as well.

3.5 Moral hazard

Misaligned incentives and the issue of moral hazard are probably less significant in insurance compared to banks, due to its less systemic relevance. However, examples of insurance bail-outs exist.

[39] The equity balancer being a possible exception.

The instruments proposed by the ESRB (2014a,b) to deal with the issue of misaligned incentives and moral hazard could, in principle, also be adequate for insurance. These are basically the setup of additional buffers that should reflect the potential losses to society of systemic risk from large and interconnected institutions. Enhancing the market discipline could also work to avoid moral hazard. As such, the following instruments could be considered:

- Additional reporting and disclosure requirements. Macroprudential authorities may want to increase the reporting and disclosure requirements to achieve a greater market discipline, which imposes incentives to undertakings to behave in a safe and sound manner.
- Request additional capital buffers such as systemic risk buffers and countercyclical capital buffers. Some buffers could be applied to certain institutions, such as global and/or domestic systemically important insurers, while others could be considered across the board.
- Request additional risk bearing capacity, for example systemic or countercyclical risk buffers.

As stressed above, a key issue is how to calibrate these buffers to reflect the real threat to society that insurance can pose in terms of systemic risk. A cost-benefit analysis might therefore discourage the use of such tools. Moreover, robust analysis and detailed estimations of the systemic risk posed by insurance companies remains elusive.

Finally, reporting and public disclosure may also be considered tools to mitigate some risks of moral hazard. Solvency II introduces extensive reporting and public disclosure from 2016.

4. Conclusions

This article seeks to contribute to the ongoing debate on the objectives of macroprudential policies. We find that while there might be indications that the size of the insurance sector may influence economic growth both directly and indirectly (through links with other parts of the financial sector), more work needs to be undertaken to assess the economic relevance of this link, and the systemicness of the insurance sector in general. We also find that understanding the interaction between micro- and macroprudential policy in insurance, as well as full coordination between national and regional authorities is essential when considering any macro-prudential strategies for the sector.

Against this background, we present a stylized framework for macroprudential policy in the insurance sector which decomposes the final objective of financial stability into two intermediate objectives: a) mitigating the likelihood of a systemic crisis to occur; and b) mitigating the negative impact in case such a crisis materialises. These intermediate objectives can be achieved through a set of operational objectives and potential macroprudential instruments. This discussion highlights the extensive room for further discussion which remains in insurance, and that it is crucial to consider the nature of this business and its specific features and avoid attempts at simply extending the banking framework to insurance. Moreover, when considering macroprudential instruments, it is necessary to strike a proper balance between maintaining the stability of the financial system and avoiding an overreaction that could be harmful for the sector and economy as a whole in the long run. Further research is clearly needed in this field.

We finally note that as Solvency II is primarily a microprudential regime, the basic calibration of risk charges, the Long Term Guarantee package, the own risk and solvency assessment (ORSA) and general risk management provided for in Solvency II mainly concern the risks posed to the insurer and not risks the insurers may pose to the financial system as a whole. A macroprudential framework in insurance could be justified in cases where there is a risk that the (collective) behaviour of insurers, or their failure, would have wider effects on the real economy. Only in this context would a macroprudential framework contribute to ensuring that these costs (externalities) are internalized by insurers themselves.

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Annex 1: Overview of macroprudential objectives and instruments discussed