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EUROPEAN INSURANCE
AND OCCUPATIONAL PENSIONS AUTHORITY

Other potential
macroprudential
tools and measures
to enhance the
current framework

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Executive summary

The European Insurance and Occupational Pensions Authority (EIOPA) initiated in 2017 the publication of a series of papers on systemic risk and macroprudential policy in insurance. So far, most of the discussions concerning macroprudential policy have focused on the banking sector. The aim of EIOPA is to contribute to the debate, whilst taking into consideration the specific nature of the insurance business.

With this purpose, EIOPA has followed a step-by-step approach, seeking to address the following questions:

- Does insurance create or amplify systemic risk?
- If yes, what are the tools already existing in the current framework, and how do they contribute to mitigate the sources of systemic risk?
- Are other tools needed and, if yes, which ones could be promoted?

While the two first questions were addressed in previous papers (see EIOPA, 2018a,b), the purpose of the present paper is to identify, classify and provide a preliminary assessment of potential additional tools and measures to enhance the current framework in the EU from a macroprudential perspective.

EIOPA carried out an analysis focusing on four categories of tools: a) Capital and reserving-based tools; b) Liquidity-based tools; c) Exposure-based tools; and d) Pre-emptive planning. EIOPA also considers whether the tools should be used for enhanced reporting and monitoring or as intervention power. Following this preliminary analysis, EIOPA concludes the following (Table 1):

Table 1: Additional tools and measures under consideration

Tool	Type of tool	Proposed for further consideration?
Enhanced reporting and monitoring		
Leverage ratio	Capital and reserving-based	Yes
Enhanced monitoring against market-wide under-reserving	Capital and reserving-based	Yes
Additional reporting on liquidity risk	Liquidity-based	Yes
Liquidity risk ratios	Liquidity-based	Yes
Enhancement of Prudent Person Principle	Exposure-based	Yes
Enhancement of own risk and solvency assessment (ORSA)	Exposure-based	Yes
Recovery plans	Pre-emptive planning	Yes
Resolution plans	Pre-emptive planning	Yes
Liquidity Risk Management Plans (LRMP)	Pre-emptive planning	Yes
Systemic Risk Management Plans (SRMP)	Pre-emptive planning	Yes
Intervention powers		
Counter-cyclical capital buffer	Capital and reserving-based	No
Capital surcharge for systemic risk	Capital and reserving-based	Yes
Liquidity requirements	Liquidity-based	No
Temporary freeze on redemption rights	Liquidity-based	Yes
Concentration thresholds	Exposure-based	Yes

It is important to stress that **the paper essentially focuses on whether a specific instrument should or should not be further considered**. This is an impor-

tant aspect in light of future work in the context of the Solvency II review. As such, this work should be understood as a first step of the process and **not**

as a formal proposal yet. Furthermore, EIOPA is aware that the implementation of tools also has important challenges. In this respect, section 6 of this report provides an overview of tools, main conclusions and observations, stressing also the main challenges.

Table 2 puts together the findings of all three papers published by EIOPA by linking sources of systemic risk and operational objectives (first paper), tools already available in the current framework (second paper) and other potential tools and measures to be further considered (current paper).

Table 2: Sources of systemic risk, operational objectives and macroprudential tools and measures

Source of systemic risk	Operational objectives	Solvency II tools with direct impact	Other potential tools and measures for further consideration
Entity-based related sources – Direct sources			
Deterioration of the solvency position leading to: <ul style="list-style-type: none"> • Failure of a Global Systemically Important Insurers (G-SII) or Domestic Systemically Important Insurers (D-SII) • Collective failures of non-systemically important institutions as a result of exposures to common shocks 	<ul style="list-style-type: none"> ➤ Ensure sufficient loss-absorbency capacity and reserving 	<i>[Note: As a comprehensive microprudential tool, Solvency II is designed to address this operational objective]</i>	<ul style="list-style-type: none"> ➤ Leverage ratio ➤ Enhanced monitoring against market-wide under-reserving ➤ Capital surcharge for systemic risk ➤ Enhancement of ORSA ➤ Request of recovery plans ➤ Request of resolution plans
Activity-based related sources – Indirect sources (i)			
Involvement in certain activities or products with greater potential to pose systemic risk	<ul style="list-style-type: none"> ➤ Discourage excessive involvement in certain products and activities 	<ul style="list-style-type: none"> ➤ Prohibit or restrict certain types of financial activities(*) 	<ul style="list-style-type: none"> ➤ Capital-add on for systemic risk ➤ Enhancement of PPP ➤ Additional reporting on liquidity ➤ Liquidity risk ratios ➤ Concentration thresholds ➤ Request of LRMP ➤ Request of SRMP
Potentially dangerous interconnections	<ul style="list-style-type: none"> ➤ Discourage excessive levels of direct and indirect exposure concentrations 		
Behaviour-based related sources – Indirect sources (ii)			
Collective behaviour by insurers that may exacerbate market price movements (e.g. fire-sales or herding behaviour)	<ul style="list-style-type: none"> ➤ Limit procyclicality ➤ Ensure sufficient loss-absorbency capacity and reserving 	<ul style="list-style-type: none"> ➤ Symmetric adjustment in the equity risk module. ➤ Volatility adjustment ➤ Matching adjustment ➤ Extension of the recovery period ➤ Transitional measure on technical provisions 	<ul style="list-style-type: none"> ➤ Additional reporting on liquidity ➤ Liquidity risk ratios ➤ Temporary freeze on redemption rights
Excessive risk-taking by insurance companies (e.g. ‘search for yield’ and the ‘too-big-too fail’ problem)	<ul style="list-style-type: none"> ➤ Discourage risky behaviour ➤ Ensure sufficient loss-absorbency capacity and reserving 	<ul style="list-style-type: none"> ➤ Prohibit or restrict certain types of financial activities(*) 	<ul style="list-style-type: none"> ➤ Capital surcharge for systemic risk
Excessive concentrations	<ul style="list-style-type: none"> ➤ Discourage excessive levels of direct and indirect exposure concentrations 		<ul style="list-style-type: none"> ➤ Concentration thresholds ➤ Enhancement of ORSA ➤ Enhancement of PPP
Inappropriate exposures on the liabilities side (e.g. as a result of competitive dynamics)	<ul style="list-style-type: none"> ➤ Ensure sufficient loss-absorbency capacity and reserving 		<ul style="list-style-type: none"> ➤ Enhanced monitoring against market-wide under-reserving ➤ Capital surcharge for systemic risk

(*) This measure, which is not part of Solvency II, is however included because it pursues similar objectives and also applies EU-wide.

1. Introduction



The European Insurance and Occupational Pensions Authority (EIOPA) initiated the publication of a series of papers on systemic risk and macroprudential policy in insurance. The first paper, 'Systemic risk and macroprudential policy in insurance' aimed at identifying and analysing the sources of systemic risk in insurance from a conceptual point of view and at developing a macroprudential framework specifically designed for the insurance sector. The second paper, 'Solvency II tools with macroprudential impact', identified, classified and provided a preliminary assessment of the tools or measures already existing within the Solvency II framework, which could mitigate any of the sources of systemic risk.

This third paper carries out an initial assessment of potential tools or measures to be included in a macroprudential framework designed for insurers, in order to mitigate the sources of systemic risk and contribute to the achievement of the operational objectives.

It covers six main issues:

- i. Identification of potential new instruments/measures. The tools will be grouped according to the following blocks:
 - Capital and reserving-based tools
 - Liquidity-based tools
 - Exposure-based tools
 - Pre-emptive planning
- ii. Way in which the tools in each block contribute to achieving one or more of the operational objectives identified in previous papers.
- iii. Interaction with Solvency II.
- iv. Individual description of all the tools identified for each of the blocks. The following classification will be considered:
 - *Enhanced reporting and monitoring tools and measures.* They provide supervisors and other authorities with additional rel-

evant information about potential risks and vulnerabilities that are or could be building up in the system. Authorities could then implement an array of measures to address them both at micro and macroprudential level (see annex for an inventory of powers potentially available to national supervisory authorities (NSAs)).

- *Intervention powers.* These powers are currently not available as macroprudential tools. They are more intrusive and intervene more severely in the management of the companies. Examples could be additional buffers, limits or restrictions. They are only justified where the existing measures may not suffice to address the sources of systemic risk identified.
- v. Preliminary analysis per tool.
 - vi. Preliminary conclusion.

Four initial remarks should be made. First, although in several instances the measures and instruments are originally microprudential in nature, they could also be implemented as macroprudential instruments, if a systemically important institution or set of institutions or the whole market are targeted. Secondly, analysing potential changes on the long-term guarantees (LTG) measures and measures on equity risk that were introduced in the Solvency II directive, although out of the scope of this paper, could contribute to further enhance the framework from a macroprudential perspective. The focus of this paper is essentially on new tools, leaving aside the analysis of potential changes in the current LTG measures and measures on equity risk, which will be carried out in the context of the Solvency II review by 1 January 2021. Thirdly, when used as a macroprudential tool, the decision process may differ, given that there are different institutional models for the implementation of macroprudential policies across EU

countries, in some cases involving different parties (e.g. ministries, supervisors, etc.). This paper seeks to adopt a neutral approach by referring to the concept of the 'relevant authority in charge of the macroprudential authori-

ty', which should encompass the different institutional models existing across jurisdictions. Fourthly, there seems to be no single solution when it comes to the level of application of each tool (single vs. group level – see Box 1).

Box 1: Scope of application of the tools and measures

There is no single answer to the question of whether a certain tool should be implemented at solo, group, or both levels. Three considerations are, however, relevant:

- The approach followed in Solvency II is a good starting point. Solvency II applies to (re)insurance undertakings, with the exception of small companies as defined in the Directive. Many of the provisions in Solvency II are applicable to solo undertakings set up within the jurisdiction. At the same time, however, Solvency II also includes provisions that focus on group-specific issues, such as the calculation of the group solvency capital requirement (SCR), qualitative requirements on governance and group own risk and solvency assessment (ORSA), disclosure and reporting requirements at group level or concentration risk.
- The source of systemic risk needs to be understood, since the decision of whether a certain tool or measure should be implemented at group or solo level will also depend on the level at which systemic risk is created or amplified (see EIOPA, 2018a), and at which level the systemic risk can best be addressed. For example, if one of the subsidiaries is carrying out the activities or offering products with greater potential to pose systemic risk, measures should be applied at this level.
- The nature of the tools needs to be considered. Certain tools might be better suited for application at group or solo level. For example, tools focused on strategic planning are, in principle, better suitable at group level.

As a result, the optimal level of application will depend on the nature of the tool and the specific risk to be addressed.

Concerning the different proposed monitoring tools, in the follow-up work, the structure and content of the additional data requirements should be defined. This should then be followed by an assessment of the potential burden of collecting this information from undertakings.

It is important to stress that **this paper essentially focuses on whether a specific instrument should or should not be further considered**. This is an important aspect in light of future work in the context of the Solvency II review. As such, this work should be understood as a first step of the process and **not as a formal proposal yet**.



2. Capital and reserving-based tools

• Objective of capital-based tools

Capital and reserving-based tools aim at avoiding the deterioration of the solvency position of undertakings in case of a shock, potentially leading to insurance failure(s). From that point of view, they contribute to the operational objective of ensuring sufficient loss absorbency capacity and reserving, resulting in a lower probability of default. Furthermore, depending on the design, such tools also reduce the possible impact of a potential default. This is a tool that is being considered by the International Association of Insurance Supervisors (IAIS) for G-SIIs.

A targeted tool such as a capital surcharge for systemic risk could, in addition, contribute to mitigate the activity-based source of systemic risk. Indeed, the tool could be designed to target certain specific activities, which would also avoid potentially dangerous interconnections. In that case, the tool would discourage an excessive involvement in such products and activities.

In certain instances, capital tools with a more time-varying element may also help build resilience and avoid collective behaviour that may exacerbate market price movements, thereby also contributing to limiting procyclicality.

• Interaction with Solvency II

Similar to the microprudential capital framework set out in Solvency II, the capital and reserving-based tools contribute to the robustness of insurance companies' balance sheets to shocks. The aggregate effect of strong capital and reserving requirements has a positive macroprudential impact for the sector as a whole, but time varying tools that require the lowering of capital requirements in times of stress could clash with the microprudential objective.

Solvency II is an economic risk-based prudential regime that prescribes the holding of capital against market risk, credit risk, underwriting risk and operational risk. It also introduces the

need to carry out an own risk and solvency assessment (ORSA). Solvency II follows a market valuation approach. Insurers establish technical provisions to cover expected future claims from policyholders. The technical provisions should be equivalent to the amount another insurer would be expected to pay in order to take over and meet the insurer's obligations to policyholders.

As a result, any new tool in this field could have a significant impact on the way in which the capital or reserving requirements are set up in Solvency II. This calls for careful tool design to understand the impact on the overall solvency calculation and possibly close coordination between the microprudential and the macroprudential approaches to avoid potential conflicts where possible. Furthermore, some of the existing tools described in the previous EIOPA paper (2018a) also address capital requirements and procyclicality.

2.1. Leverage ratio

• Description of the tool or measure

This section focuses on the concept of leverage from an own funds perspective in the insurance industry. To that aim, concepts as the 'synthetic leverage' i.e. products with embedded guarantees that can be compared to derivatives, are not covered.

Leverage ratios are commonly used as a capital ratio measure. A leverage ratio could also be used as a monitoring tool (as proposed in this paper) or implemented as a hard requirement (e.g. in banking).

Leverage ratios aim at identifying the build-up of leverage so that action can be taken before a stress occurs and the entity carries out destabilising deleveraging processes. It is intended to be able to signal a deterioration of the solvency position of undertakings, potentially leading to failure(s). As a result of this, it should contribute to the operational objective of ensur-

ing sufficient loss absorbency capacity and reserving. Furthermore, in certain circumstances (described below), the leverage ratio could have a positive

impact in identifying the involvement in certain activities or products with greater potential to pose systemic risk.

Capital and reserving-based tools	Main source(s) of systemic risk	Operational objective(s)
Leverage ratio	<ul style="list-style-type: none"> • Deterioration of the solvency position leading to: <ul style="list-style-type: none"> – Failure of a G-SII, D-SII – Collective failures of non-systemically important institutions as a result of exposures to common shocks • Involvement in certain activities or products with greater potential to pose systemic risk 	<ul style="list-style-type: none"> ➢ Ensuring sufficient loss absorbency capacity and reserving ➢ Discourage excessive involvement in certain products and activities

Experience from the financial crisis showed that the low risk weights applied to banks' assets disguised the build-up in leverage that otherwise would have decreased the banks' capital ratios. Consequently, the leverage ratio in the banking sector was designed to be independent of the risk weighting applied to banks' assets. According to the Basel III framework, the leverage ratio is defined as the Tier I capital divided by the total exposure, which is a measure of a bank's non-risk-weighted assets.¹ The minimum leverage ratio was set at 3%, but varies across jurisdictions and also depending on other bank capital buffers.

• **Preliminary analysis**

In insurance, the concept of the leverage ratio varies much more than in banking. This is due to i) the inverted production cycle, and ii) the fact that there is not a common definition of leverage in insurance, and therefore, there is not a simple non-risk weighted ratio that can be used for the same purpose. Also, the business model is substantially different, and size is not automatically considered as a source of systemic risk, but is to some extent necessary in order to be able to apply the law of large numbers. Instead, in insurance, there is a multiplicity of ratios (based on metrics such as investment assets or insurance liabilities) which become less straightforward to inter-

pret. As a result, contrary to what happens in banking, any kind of leverage ratio in insurance should be better used to identify and monitor the potential build-up of risks instead of to impose an additional requirement.

EIOPA has identified three different ways in which leverage in insurance could be measured:²

- Own funds to total assets;
- Insurance liabilities to own funds; and
- Non-insurance liabilities to own funds.

The term 'own funds' includes not only excess of assets over liabilities, but also the subordinated liabilities. This preliminary analysis will focus on the macroprudential aspects of the indicators above. It will therefore focus more on the usefulness of the indicators in terms of alerting to the build-up of systemic risk.

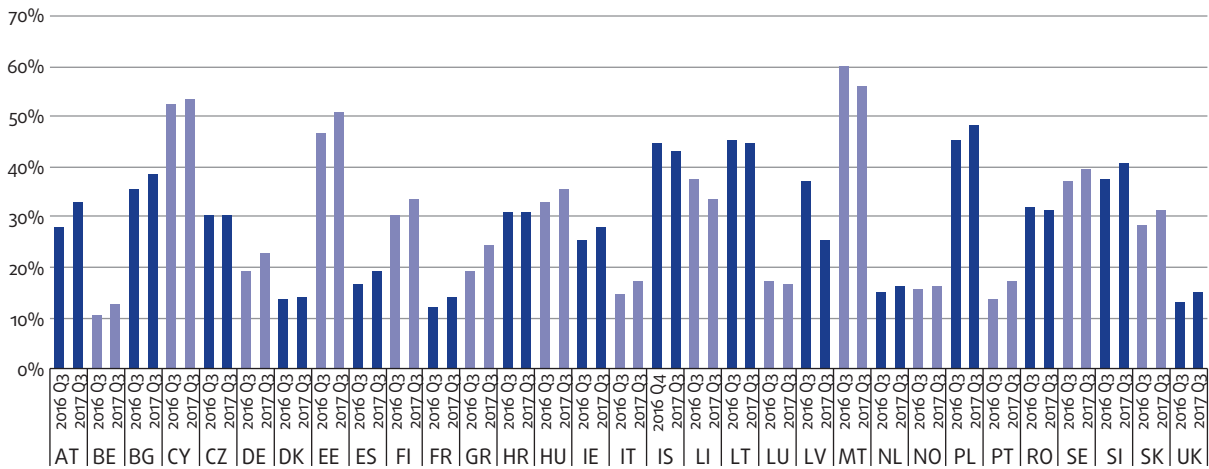
The first definition, i.e. own funds to total assets (Figure 1), is typically used in the banking sector and *a priori* may appear to have utility as a non-risk based leverage measure.

¹ The leverage ratio consists on the sum of on-balance sheet exposures, derivatives exposures, securities finance transaction exposures and off-balance sheet items.

² In addition to the listed stock based measures, the market also relies on some hybrid stock / flow measures such as the premiums written ratio and its net liability ratio. Net leverage is calculated as (net premiums written / (Total Assets – Technical provisions)) + (net liabilities / (Total Assets – Technical provisions)). The evidence that the main source of funding for insurers are the written premiums serves as a rationale for those indicators that estimate the ability of an insurer to sustain its business via premiums.

$$\text{Leverage ratio} = \frac{\text{Excess of Assets over Liabilities} + \text{Subordinated liabilities}}{\text{Total assets (excl. assets held for index and unit linked contracts)}}$$

Figure 1: Leverage ratio - Own funds to Total Assets. %

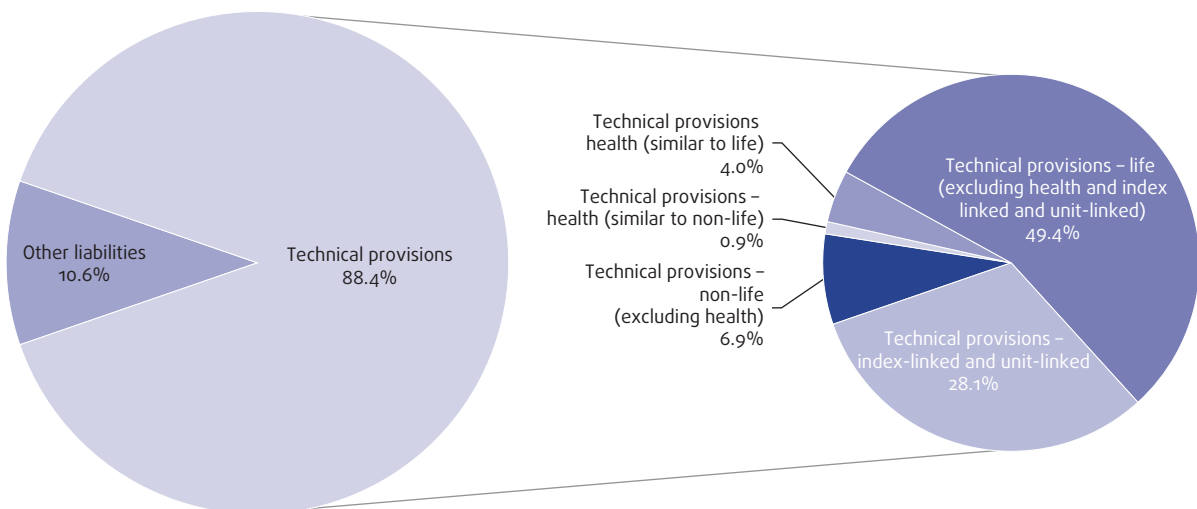


Source: EIOPA [Solo/Quarterly/Published 201800322/Data extracted 20180301]

Nevertheless, given the different nature of the business models of insurers and banks, establishing a minimum leverage ratio requirement for insurers similar to the one used in banking raises several conceptual questions and makes it rather inappropriate for insurance. As explained by Insurance Europe (2014), the aim of the leverage ratio (as a specific requirement, i.e. not as a monitoring tool) is to

curb banks' reliance on debt by setting a minimum standard establishing a relation between the assets of the bank on their books and the capital they need to hold. It aims at limiting procyclicality by limiting the build-up of leverage in up-turns. While leverage in terms of debt to equity is inherent in bank business models, it is quasi-absent in the case of the insurers (see Figure 2).

Figure 2: Liability profile of insurers in European Economic Area. 2017 Q3. %



Source: EIOPA [Solo/Quarterly/Published 201800322/Data extracted 20180301].

The ratio will also differ between different business models of insurance undertakings for reasons other than the riskiness of the insurer, which makes peer comparison of the ratio of limited use.

Notwithstanding the above, considering the relation between own funds and total assets as well as its evolution over time just for monitoring purposes could provide a first and rough overview of the sector's loss absorption capacity to cope with potential asset-side shocks.

However, such a ratio would not take into account the strong interrelation between assets and liabilities for parts of the insurance sector, in particular life insurance undertakings, where market risk shocks typically effect both the asset and the liability side. Therefore, two insurers showing the same own funds to total assets ratio could exhibit very different loss absorbing capacities against asset-side shocks, depending on the degree of matching between assets and liabilities and the exposure of liability values against those shocks.

An alternative approach is looking at the insurance liabilities by focusing on the technical provisions with respect to the own funds. This is the approach usually followed in financial analysis, which looks, for instance, at the ratio of (net) technical reserves to own funds. However, the interpretation of this ratio is not straightforward and would not be very useful from a macroprudential point of view. For example, technical provisions, which would be the numerator of this leverage ratio, could be re-

duced in order to reduce leverage. Contrary to banking, however, in insurance this may be counterproductive.

In a Solvency II environment, the technical provisions are composed of the best estimate and the risk margin. The former reflects the present value of the expected future cash flows calculated on a relevant risk free rate curve. The latter is an additional premium over the best estimate, which 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. The risk margin should ensure that the value of the technical provisions is equivalent to the transfer value that a third party reference undertakings would be expected to require in order to take over and meet the insurance and reinsurance obligations.

Taking these aspects into account suggests that larger technical provisions do not generally lead to higher risk,³ especially considering the benefits to insurers of the law of large numbers. In that sense, a leverage ratio may encourage less provisioning, which could have the opposite effect of the objective of prudential supervision. However, it is also true that a large amount of technical reserves compared to equity can be indicative of high leverage, in the sense that it makes the insurers more vulnerable to potential deficiencies in loss reserves. In summary, it is difficult to draw strong conclusions from this ratio.

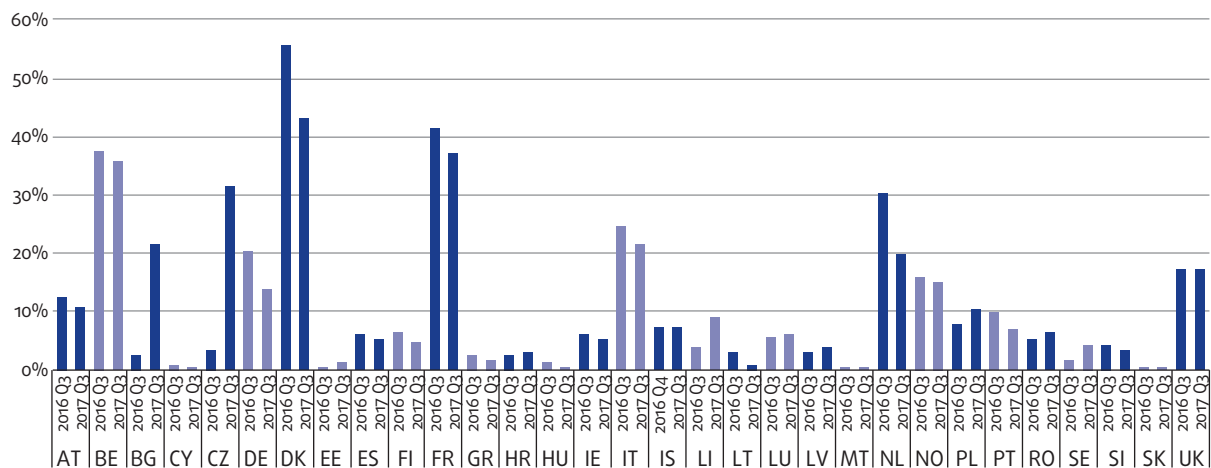
A third definition of leverage ratio is the ratio of non-insurance liabilities to own funds (Figure 3). The ratio would include the following items:⁴

3 It should be noted that insurance liabilities could also be reinsured to reduce the numerator and improve the ratio. This limits the usefulness of such indicator of leverage/indebtedness.

4 In this case, 'subordinated liabilities' appears both as part of 'non-insurance liabilities' as well as 'own funds', in accordance with the definition followed.

$$\text{Leverage ratio} = \frac{\text{Subordinated liabilities} + \text{Debts owed to credit institutions} + \text{Financial liabilities other than debts owed to credit institutions}}{\text{Excess of Assets over Liabilities} + \text{Subordinated liabilities}}$$

Figure 3: Leverage ratio - Non-insurance liabilities to own funds. %



Source: EIOPA [Solo/Quarterly/Published 201800322/Data extracted 20180301]

A high level of this ratio is also associated with a high level of interconnectivity across markets and sectors. Risks can emerge in response to market movements or policyholder behaviour, forcing insurance companies to undertake fire sales of assets in a severe scenario, in order to face liquidity shortages and/or to maintain profitable and solvent.

As a next step, the focus should be put on potential measures that NSAs could take once some kind of leverage has been identified (see annex detailing powers available to NSAs). This very much depends on the type of leverage considered. If the ratio of own funds to total assets shows a decreasing path at market level that raises concerns to the NSA and/or to the relevant authority in charge of the macroprudential policy. The way to address it could be at microprudential level, by first assessing more closely the nature and drivers of the observed trend and, where necessary, by intensified or dedicated supervisory actions as well as through Pillar 2 measures of Solvency II. If, however, the non-insurance liabilities to own funds ratio is considered, the attention should be put in either reducing the

non-insurance liabilities or strengthening the own funds of the companies involved, if the supervisory authority deems it necessary after a comprehensive assessment of the situation.

• **Preliminary conclusion**

The preliminary analysis described above suggests that from the three definitions considered for leverage ratio in insurance, i.e. own funds to total assets, insurance liabilities to own funds and non-insurance liabilities to own funds, monitoring the evolution of the first and the third may have the potential to add value from a macroprudential point of view. They should only be considered as monitoring tool within a range of other indicators in order to detect the potential for threats to the solvency position of the market.

In particular, an excessive level of non-insurance liabilities might increase the build-up of systemic risk and should therefore be closely monitored by authorities. The question remains, however, about how to define more precisely the numerator or the leverage ratio. Potential ratios should first be validated with historical data to assess their viability.

2.2. Enhanced monitoring against market-wide under-reserving

• Description of the tool or measure

Underreserving may occur on a market-wide base where assumptions used in the valuation of technical provisions are insufficient, or where input data used is of insufficient quality. This would lead to inappropriate exposures on the liability side and the deterioration of the solvency position of insurance companies, potentially leading to insurance failure(s). Assessing the appropriateness of undertaking's valu-

ation of technical provisions is a core task of insurance supervision at micro level. By being able to monitor, in addition to a company-specific assessment, any market-wide under-reserving, authorities contribute to the operational objective of ensuring sufficient loss absorbency capacity. Monitoring is a necessary prerequisite for an informed decision on any policy actions. As supervisors can only check assumptions as part of their supervisory review, it might be difficult to aggregate the relevant data and, therefore, to determine whether the problem is isolated or widespread in the market.

Capital and reserving-based tools	Main source(s) of systemic risk	Operational objective(s)
Enhanced monitoring against market-wide under-reserving	<ul style="list-style-type: none"> • Deterioration of the solvency position leading to: <ul style="list-style-type: none"> – Failure of a G-SII, D-SII – Collective failures of non-systemically important institutions as a result of exposures to common shocks • Inappropriate exposures on the liabilities side (e.g. as a result of competitive dynamics) 	<ul style="list-style-type: none"> ➤ Ensuring sufficient loss absorbency capacity and reserving

All assumptions used within the calculation of technical provisions serve as a source of profits or losses – depending on the choice of the assumptions and actual experience regarding their realisation. Therefore, in a first step, data should be collected, on a market-wide basis, by reviewing the insurers' essential actuarial assumptions (e.g. lapse rates, cost charges, biometric tables) against the actual experience by decomposing the realised annual profits/losses into their sources (these sources are the assumptions mentioned above as well as their adjustments).

If a set of assumptions regularly/permanently provides losses, this is a clear indication that the set is not well calibrated or contains flawed components. If this were to be the case for the overall market, an underreserving (for example, due to heightened competition) can be ascertained. In this case the supervisory authority in charge should be

able to ask insurers to apply more adequate assumptions in their calculations in order to avoid market distortions and to address underreserving (macro- and microprudential level). This should take the situation of the individual undertakings and their particular insurance portfolios into account in order to incentivise adequate risk management (e.g. by using assumptions that on average would not have provided losses in the last 3 years).

In the same vein, cross-comparison and a view of the overall market would provide an additional macroprudential insight for the supervisory authority. To this end the decomposition of the profits and losses into their components at a more granular level than the current templates on the variation analysis (VA) would help supervisors at EU level to achieve a better comparability and transparency and eventually iden-

tify and possibly prevent situations of under-reserving at market wide level.⁵

• Preliminary analysis

A market-wide underreserving can only be detected by collecting data at market level on the development of profits and losses and by decomposing them according to their sources (e.g. mortality component, lapse components, etc.). The identification of such a risk could then trigger supervisory action to address it. These actions, which may be taken at the microprudential level, could range from intensified monitoring to actions that are more intrusive. An example of the latter would be asking insurers to derive parameters (e.g. by defining a bandwidth) which avoid an underreserving or to provide more explicit interpretation on best estimate parameters which have to be applied at

market level. This should only happen where the authorities deem it necessary and where such actions are commensurate with the principle-based requirements for the valuation of technical provisions under Solvency II.

Enhanced monitoring against market-wide underreserving is intended to identify potential deviations of the assumptions versus actual experience to foster effective and harmonised actuarial methodologies throughout the European Union. In order to address the macroprudential risk of underreserving, according to EIOPA (2018a), the comparison of assumptions to actual experience is required. The information is currently not collected at European level and can only be found at the national level (generally based on Solvency I data).⁶

Box 2: Market-wide underreserving in the US

As pointed out in EIOPA (2018a), market-wide underreserving is not just a potential risk. In fact, it has materialised within the US life insurance market, where there were several price wars in the 1980/90's (Reich, 1997). Several life insurers went bankrupt or were put under state control. According to Briys and de Varenne (2001), there were 19 bankruptcies in 1987, 40 in 1989 and 58 just one year later. In line with Reich they recognise the heightened competition as the main reason for this development which led to 'recklessly offered high yields and options'.

As an adequate reserving prevents an under-pricing by requiring insurers to demand sufficiently high premiums. Therefore, ensuring that actuarial standards in reserving are maintained is an efficient way to avoid bankruptcies due to heightened competition.

⁵ In line with what stated in Solvency II (Recital 51), '[t]he principles and actuarial and statistical methodologies underlying the calculation of those technical provisions should be harmonised throughout the Community in order to achieve better comparability and transparency.' Recital 58 states that '[i]t is necessary that the expected present value of insurance liabilities is calculated on the basis of current and credible information and realistic assumptions, taking account of financial guarantees and options in insurance or reinsurance contracts, to deliver an economic valuation of insurance or reinsurance obligations. The use of effective and harmonised actuarial methodologies should be required.'

⁶ In several member states some Solvency I data still exists under national generally accepted accounting principles that is used for monitoring underreserving. However, this is not put of Solvency II and, thus, represents a gap in the European framework.

It should be stressed that the actuarial function already has to determine these deviations in order to assess the assumptions made in the best estimate of the technical provisions. Therefore, the data should already be available without becoming an unbearable additional burden for companies.

In order to develop this tool, the assumptions used in the calculation have to be determined.⁷ In a second step, one should make clear how to allocate the profits/losses by decomposing the annual result to its sources. Here, a thorough and mathematically correct assignment of profits/losses to their sources is very important in order to develop suitable indicators/parameters. By evaluating these decompositions regularly, supervisors can/should assess whether an underreserving occurs.

The expected outcome of this measure is that supervisors enhance their overview on potential underreserving, which may become systemic if it occurs market-wide and on a large basis. Furthermore, it provides the basis to ask for corrections if deemed necessary. If applied, it leads to higher technical provisions resulting in more funds that could cover liabilities and loss absorb-

ing capacity. Thus, it fosters safety and stability in the insurance sector.

The quantitative reporting templates (QRT) of the variation analysis (VA QRT 29.03. and 29.04) would serve as the starting point and could be enhanced, as they aim at explaining the changes in the balance sheet from one year to the other. The information in the VA templates is currently not granular enough in order to allow supervisors to detect problematic reserving, where it occurs.

This instrument would require data at a micro-level basis (e.g. profits/losses from mortality tables or cost charges used in the calculation). Although insurers have to internally prepare intermediary steps to provide the information in the above-mentioned VA templates, this information is not reported under Solvency II, hindering the monitoring against market-wide underreserving.

In summary, this tool has a clear benefit in terms of supplementing the microprudential supervision by providing additional macroprudential information about the quality of the assumptions made in order to calculate the technical provisions. Given that this information should already be available, the additional resources needed seem limited.

⁷ The assumptions used within the calculation of the best estimate of Solvency II are not fully known yet. Before this tool can be finally assessed, it is worth to evaluate the market on which assumptions are made. Possibly, definitely immaterial assumptions might be summarized to a residual source of profits/losses.

Figure 4: Variation analysis of the change of the best estimate from one year to the next one

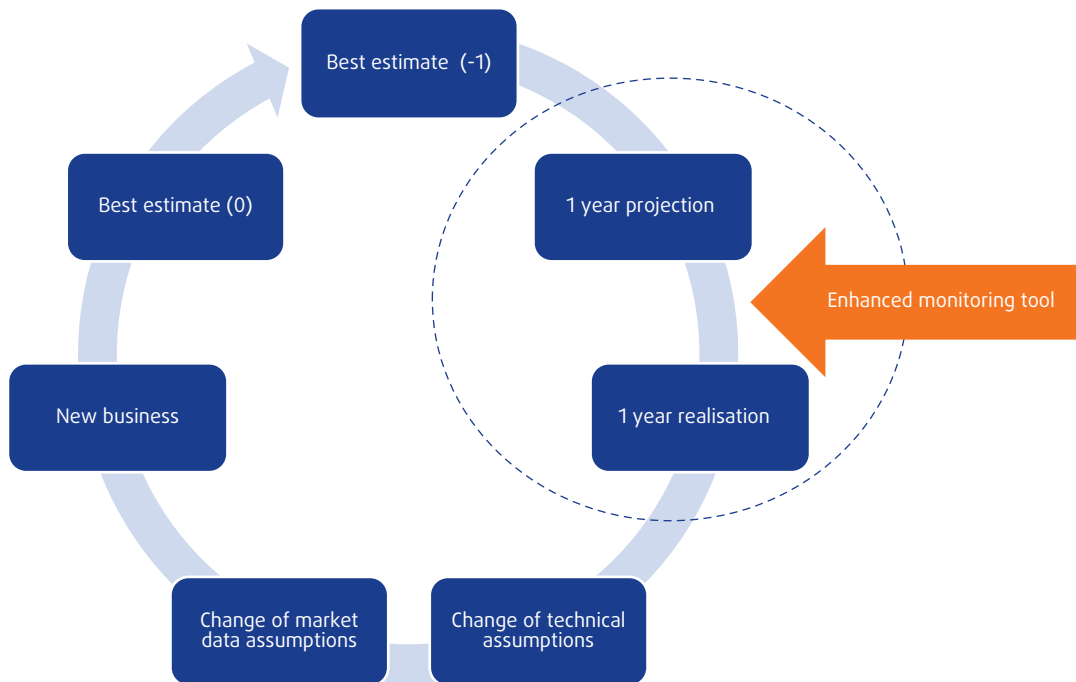
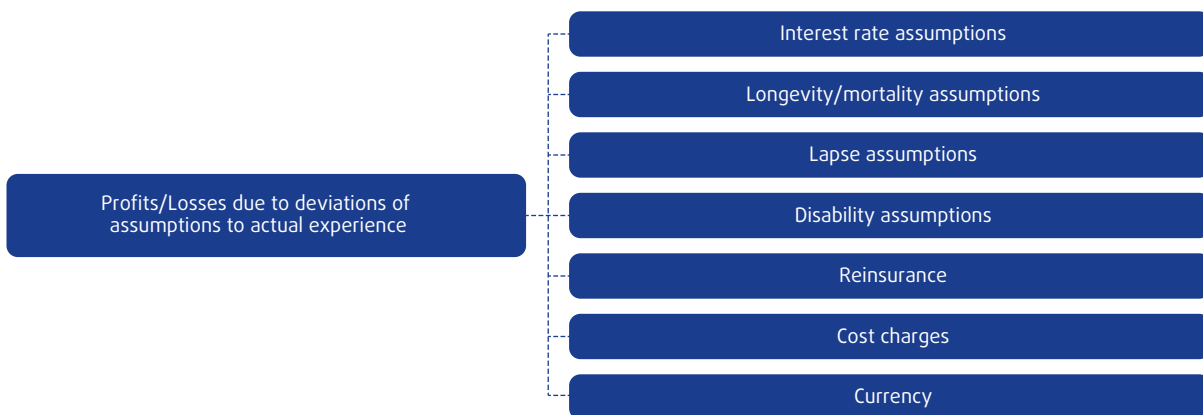


Figure 4 shows the variation analysis of the change of the best estimate from one year to the next one. In this analysis the projection vs. the realisation is considered only on an aggregate level. The tool for enhanced monitoring would propose to add a more detailed

analysis of the change of the best estimate by providing not only more granular data on the changes of the assumptions but also by analysing the profits/losses due to the actual experience as shown in Figure 5.

Figure 5: Profits/Losses due to deviation of assumptions to actual experience



As seen in Figure 5, the profits and losses due to mortality tables (for contracts protecting against mortality on the one side and for contracts protecting against longevity on the other), interest rate assumptions, lapse assumptions, disability assumptions, re-insurance programs, cost charges and currencies would be perceivable and could be used for supervisory purposes, i.e. emerging systemic risks due to an underreserving could be detected by this analysis.

- **Preliminary conclusion**

Supervisors would use the additional data not only for microprudential purposes, but for macroprudential analyses as well to obtain a holistic approach of supervision. However, the link between the macro- and microprudential use of such a tool would need to be carefully examined.

Furthermore, it enables the supervisory authorities to take into account the whole market, i.e. national data would be supplemented and data for cross-border business would become available. The decomposition of profits and losses into their components that fully explain the variation of the technical provisions from one year to another would help supervisors at EU level to achieve a better comparability and transparency and eventually identify and possibly prevent situations of under-reserving at market wide level. Indeed, the information collected may be used for international exchange and strengthen policyholder protection and financial stability. Supervisory authorities would get a full overview of their own markets as well as the common market.

This instrument deserves to be further considered in order to address the risk of underreserving. A purely qualitative assessment of this risk may not be sufficient, because its adequacy is not

verifiable and difficult to form a sector-wide view. An enhanced monitoring tool against underreserving could support a quantitative assessment of the risk of underreserving.

The tool would provide information on whether the assumptions made in the technical provisions provided profits or losses. This information yields important evidence on the appropriateness of the assumptions made in the technical provisions and could indicate that a possible market-wide underreserving exists. This information is currently not yet available.

2.3. Counter-cyclical capital buffers (time-varying capital tools)

- **Description of the tool or measure**

The need for a broad-based capital buffer that works anticyclically (i.e. buffers are built up during upswings of the credit cycle and run down during periods of financial market stress) has largely been debated in the banking sector and is slowly also spreading to insurance. For example, the ESRB (2015a) noted that '(...) Solvency II did not contain requirements to build up resilience in upturns (...) for pure macroprudential purposes via capital buffers or add-ons to reserving requirements'. Similarly, the IMF (2016) noted that market consistent valuation (such as Solvency II) tended to make regulatory capital requirements more pro-cyclical unless durations between assets and liabilities are perfectly matched. It identified countercyclical capital buffers as one measure that, 'if properly designed', that could be used to strengthen the resilience of global insurance sectors in response to increased common exposures. This is in line with one of the sources of systemic risk identified by EIOPA.

Capital and reserving-based tools	Main source(s) of systemic risk	Operational objective(s)
Time-varying capital tools such as CCyB	<ul style="list-style-type: none"> • Deterioration of the solvency position leading to: <ul style="list-style-type: none"> – Failure of a G-SII, D-SII – Collective failures of non-systemically important institutions as a result of exposures to common shocks 	<ul style="list-style-type: none"> ➤ Ensuring sufficient loss absorbency capacity and reserving

The EU introduced a countercyclical capital buffer (CCyB) under the Capital Requirements Directive IV (CRD IV) in 2014. The CCyB is intended to ensure that credit institutions build up capital in an upturn of the credit cycle so that in a downturn the buffer can be released and the institution is not incentivised to reduce lending in order to improve their capital ratio.

For banks, the CCyB is a broad-based, rule-based tool. The amount of each institution's buffer is calculated according to a specific formula that uses the CCyB rates set by individual macroprudential authorities as inputs. There is discretion by the macroprudential authority in what level to set their local CCyB rate, guided by factors such as the credit to GDP gap, but once that decision is made, the calculation of the buffer for each institution is automated. It is calculated as a percentage of the institution's total risk exposures, and the percentage is based on a weighted average of the CCyB rates in the jurisdictions where the institution's relevant credit exposures are located.⁸

Broad-based time-varying buffers such as the CCyB can be linked to both the exposure channel and the asset liquidation channel. Buffers can be used to reflect increased risk in the financial cycle, similar to the role of the CCyB in banking reflecting the overall level of risk in the credit cycles where the bank operates.

• Preliminary analysis

The insurance sector is also vulnerable to booms and busts, but not in the same way as banks, and the ef-

fect varies widely across the sector. For example, while credit-based insurance products and real estate exposures will be impacted by the credit cycle similar to the impact on banks, these products make up a relatively minor share of insurers' balance sheets.

In addition to the credit cycle, insurers are vulnerable to shocks to the prices of the assets they hold to fund their insurance liabilities, such as equities, corporate and sovereign debt instruments. Their values can be linked to interest rate movements which also go through boom and bust cycles that do not necessarily align with the credit cycle.

Insurers' vulnerability to these shocks also depends on their individual asset holdings, which vary substantially across the EU, as well as the type of insurance liabilities they hold and whether they offer fixed or variable returns. That points to an automated, broad-based capital tool such as the CCyB in banking being inappropriate for insurance. However, a more targeted capital tool could be appropriate for targeting the cyclical nature of specific exposures.

A key element in the analysis of time-varying capital tools is the consideration of how the tool would interact with other countercyclical elements of Solvency II, or other capital surcharges used to address systemic risk. Solvency II already contains three permanent capital tools that have a countercyclical impact. These are the volatility adjustment, the matching adjustment, and the symmetric adjustment to the equity risk sub-module. As set out in more detail in a previous paper (EIOPA, 2018b), although the volatility adjustment and matching adjustment are designed, at

⁸ According to the ESRB, only five countries have CCyB applicable rates as of 16 February 2018.

least in principle, to be a symmetric adjustment, they usually act to reduce technical provisions during times of stress and circumstances that would lead to a positive adjustment are limited. The symmetric adjustment, as reflected in its name, is more able to operate to increase requirements in good times and reduce them in bad times, but cannot increase or decrease the equity risk charge by more than 10%. It is also limited to insurers using the standard formula.

The use of multiple targeted tools through the long term guarantee measures allows the Solvency II calculation to respond to the different 'cycles' that insurers are exposed to in a way a single broad-based capital adjustment like the CCyB would not. But these targeted tools do not (and were not intended to) capture all sources of systemic risk or procyclicality for which additional resilience could be needed. Therefore, there could be certain room for additional capital tools to address procyclicality not covered by existing long-term guarantee measures.

In terms of costs, increased capital is a cost in itself and time-varying tools can introduce further volatility into insurers' solvency positions if not designed well. One consideration is whether the tool should be rules-based or discretionary. Discretionary tools can be targeted and only used when needed, which lowers their cost. However, discretionary tools also increase uncertainty and rely heavily on supervisory judgement to ensure their creation and release are timed appropriately. Discretionary tools need to build in a set of criteria to ensure cost-benefit analysis is carried out when a specific tool is needed and designed.

A discretionary tool for authorities to require additional capital for macroprudential purposes (such as a capital surcharge for systemic risk – see section 2.4) could be a useful complement to the current framework to address

residual sources of procyclicality. This would be consistent with the approach taken in banking, where in addition to the CCyB, authorities are able to require additional own funds where existing tools are not adequate, through the use of the 'systemic risk buffer' under Article 133 or the 'national flexibility measures' under Article 458 in CRR that can be used to increase risk weights or own fund requirements, or through increasing risk weights for real estate exposures.⁹

Several important operational issues and challenges of such a tool need to be taken into consideration:

- Time-varying rule-based capital tools require the development of an adequate methodology considering key aspects such as the calibration or the thresholds to be used. These are elements which are not trivial to define in insurance.
- There is a risk that authorities do not release the capital in the relevant downturn as planned, which would reduce its ability to absorb shocks. Releasing capital in times of stress may be difficult to reconcile with Solvency II's objective of policyholder protection. For the CCyB, only one jurisdiction has released the CCyB, which the UK did in July 2016.¹⁰ However, there may be ways of minimising this risk through requiring ongoing review and justification of the measure or setting out criteria to guide the release of the capital requirement.
- The capital would need to be increased before it can be released to absorb shocks, so has limited use if further shocks occur before the capital tool has been implemented.
- Capital tools target resilience and would only have indirect effect on in-

⁹ Risk weights and loss given default values can be increased for exposures to residential or commercial real estate under Articles 124 and 164 of CRR.

¹⁰ <http://www.bankofengland.co.uk/publications/Documents/records/fpc/pdf/2016/record1607.pdf>

centives of insurers, so restrictions on systemic activities themselves may be a more efficient way of addressing the risks. Holding more capital is

not necessarily the right approach to reduce risks in the insurance sector (see Box 3).

Box 3: The dynamics of capital in insurance and its policy implications

In line with other financial institutions, the main objective of capital in insurance is acting as a cushion to absorb losses in case the value of assets falls behind the value of liabilities. In (traditional) insurance, however, there are important considerations to be made.

- Insurers collect premiums upfront. Resources are then invested in order to hold sufficient and appropriate assets (in terms of cash flow characteristics like duration, liquidity and currency) to meet their liabilities over time. This is usually referred to as ‘liability investment approach’ and contrasts with the principle of ‘maturity transformation’ underlying in the banking business, which implies that the resources coming from the deposits (short-term liabilities that can be withdrawn at will) are substantiated in loans (long-term, illiquid assets). This creates a series of risks (with liquidity risk being the most prominent one) that are as such not present in insurance, whose impact is particularly relevant in case of failure.
- In a Solvency II environment, the technical provisions are composed of the best estimate and the risk margin. The former reflects the present value of the expected future cash flows calculated on a relevant risk free rate curve. The latter is an additional premium over the best estimate, which 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. In practical terms, the best estimate is, in itself, designed to absorb losses coming from the insurance business.
- As a result of the above, losses should normally not exceed the value of assets backing the technical provisions. If, however, the technical provisions were not correctly estimated, or if the value of assets is not enough to cover the liabilities, the own funds should, on top, be able to absorb the ‘extraordinary’ losses. This should not only ensure that the undertaking is able to withstand the shock, but also that its obligations to policyholders continue to be met.

There are several policy implications:

- The increased safety derived from additional capital requirements (on top of the currently existing regulatory ones) might not offset the marginal cost of capital.
- Capital tools may therefore generally not be the optimal regulatory approach. The focus should be put on risk management, in particular, on the investment approach of insurers.
- This above is essentially valid for traditional insurance business. The more an insurer departs from traditional insurance business and starts engaging in activities with greater potential to pose systemic risk (e.g. entailing leverage and or maturity transformation in a banking sense), the more likely it is that capital tools turn to suitable policy options, similar to that which happens in other sectors. This is consistent with the need to focus on specific activities (and not only on the type of financial institution), which would also avoid potential regulatory arbitrage across the financial sector.
- A targeted (i.e. applied to specific institutions) and discretionary (i.e. more flexible) capital tool would be a better option to address this risk in case insurers engage in such activities with greater potential to pose systemic risk.

- Capital releases have complex timing issues – there is a risk of releasing capital at the wrong time and insurers pay out the release as dividends rather than using it to absorb shocks.
- National measures reduce consistency across the EU, and may distort competition between insurers. Ob-

jective criteria, an approval process or possibly a reciprocity framework may be needed to support the Single Market. However, the use of criteria and complicated approval processes can also create inaction bias if not designed well.

- **Preliminary conclusion**

Given the way in which the insurance sector works, the risk of overlaps with work of current countercyclical features of Solvency II, the operational difficulties and, in general, the lack of a close link with the credit cycle, a broad-based countercyclical capital buffer is not considered to be a necessary tool. Furthermore it would also not be easily incorporated into Solvency II framework.

There is, however, a need to consider how authorities could address potential residual risks (including procyclicality) not covered by the existing long-term guarantee measures. This issue, which could for example be addressed by means of a capital surcharge should be considered further as part of work on capital surcharges for systemic risk.

2.4. Capital surcharge for systemic risk

- **Description of the tool or measure**

A capital surcharge for systemic risk could be designed as an entity-based as well as an activity-based and behavioral-based add-on. An entity-based capital surcharge for systemically important insurers could address risks that are associated with insurance companies that are deemed systemically relevant at a global and/or national level. Such a capital surcharge would resemble the other systemically important institutions (O-SII) buffer used in the banking sector, where domestically systemically relevant institutions need to adhere to 'supplementary requirements concerning the amount of Common Equity Tier 1 capital they must hold as a buffer'. These buffers aim to address the potential negative effects that O-SIIs may have on the international or domestic financial system (ESRB, 2017).

An activity-based capital surcharge is to be applied to entities because of their involvement in certain types of

activities that are more prone to create systemic risk. For instance, in case of bank-like activities, this would also protect against regulatory arbitrage where risks migrate from the banking sector to the insurance sector.¹¹ The activity-based approach to a capital surcharge is in parallel with the systemic risk buffer (SRB) in the banking sector, which 'aims to address systemic risks of a long-term, non-cyclical nature that are not covered by the Capital Requirements Regulation' (ESRB, 2017).

A capital surcharge based on the behaviour of insurance undertakings could be considered in case the collective behaviour of insurance companies potentially affects the financial market and the rest of the economy through significant influence on market prices and capital flows. This could be the case, for example, if there is sufficient residual risk of procyclical behavior not covered by the existing long-term guarantee measures.

A capital surcharge may contribute to different sources of systemic risk identified, depending on whether the capital surcharge addresses systemically important institutions, activities or collective behaviour. First, an entity-based capital surcharge could mitigate a deterioration of an insurer's solvency position leading to a failure that might have an impact on the financial system and on connected institutions. Secondly, an activity-based capital surcharge may help reduce contagion through involvement in bank-like activities or common exposures, and protect against regulatory arbitrage where risks migrate from the banking sector to the insurance sector. It could also discourage the involvement in certain products and activities (depending on its design) and assist in pricing the systemic impact of activities. Thirdly, a capital surcharge focused on the behaviour of insurers may help to avoid excessive risk-taking by insurance companies, as they

¹¹ ESRB (2016).

would be requested to hold additional resources on top of the already existing capital requirements. Furthermore,

it would also provide additional loss-absorbing capacity in case of inappropriate exposures on the liability side.

Capital and reserving-based tools	Main source(s) of systemic risk	Operational objective(s)
Capital surcharge for systemic risk	<ul style="list-style-type: none"> • Deterioration of the solvency position leading to: <ul style="list-style-type: none"> – Failure of a G-SII, D-SII – Collective failures of non-systemically important institutions as a result of exposures to common shocks • Involvement in certain activities or products • Excessive risk-taking by insurance companies (e.g. ‘search for yield’ and the ‘too-big-too fail’ problem) • Inappropriate exposures on the liabilities side (e.g. as a result of competitive dynamics) 	<ul style="list-style-type: none"> ➤ Ensuring sufficient loss absorbency capacity and reserving ➤ Discourage excessive involvement in certain products and activities ➤ Discourage risky behaviour

• **Preliminary analysis**

Solvency II incorporates the possibility of a capital add-on (arts. 37 and 232 for groups) in Pillar II. This capital add-on allows supervisors to increase the required capital of individual insurers on a case-by-case basis. It is aimed at ensuring an adequate level of the SCR in order to protect policyholders’ interests rather than explicitly dealing with systemic risk. It also seeks to preserve a level playing field by including specific criteria that must be met before a capital add-on may be imposed or maintained.¹²

The existing capital add-on powers in Solvency II can be used in three different situations:

- i. To mitigate circumstances where the SCR (calculated using either the standard formula or internal models) does not adequately reflect the very specific risk profile of an insurance or re-insurance undertaking (Article 37(1)(a) and (b)).
- ii. To mitigate a significant governance deficiency (art. 37(1)(c)).
- iii. In cases where the undertaking applies the matching adjustment, the volatility adjustment or the transitional

measures and the supervisory authority concludes that the risk profile of that undertaking deviates significantly from the assumptions underlying those adjustments and transitional measures (art. 37(1)(d)).

Under the current Solvency II text, capital add-ons are microprudential in focus, intended only to be used as a corrective measure to increase the level of capital required under the SCR appropriately until the undertaking has remedied the identified deficiencies. The existing capital add-on is not meant to be imposed as a means of addressing systemic risk.

A macroprudential capital surcharge instrument could be integrated in Solvency II as a new macroprudential tool. It would function as a structural measure, as opposed to the existing capital add-on instrument in Solvency II.

A macroprudential capital surcharge as the one being considered could be integrated both in Pillar I (calculation of capital reserves) and Pillar II (management of risks and governance) of Solvency II. This will depend on its intended form and calibration. For example, Pillar I would be a more appropriate place for an entity-based capital surcharge, given that a macroprudential capital surcharge would function as a structural and quantitative measure.

¹² Chapter 3 of CEIOPS’ Advice for Level 2 Implementing Measures on Solvency II: Capital add-on.

For instance, it could be imposed to systemic institutions as a regular capital requirement. On the other hand, the identification of certain activities that are more prone to create systemic risk or the collective behaviour of insurance companies that could potentially affect the financial market and the rest of the economy may perhaps be better covered in Pillar II. One reason is that this measure would be more time-varying and to some extent even temporary (as the capital surcharge would be imposed on a case-by-case basis, depending on the activities and behaviour being undertaken). An extension of the situations included in the current Solvency II capital add-on could therefore be considered as the easiest way to include these macroprudential concerns.

Importantly, a macroprudential capital surcharge would not only be consistent with the current Solvency II framework, but should also take into account developments at level of the International Association of Insurance Supervisors (IAIS) in the context of the higher loss absorbency requirement (HLA) and the Insurance Capital Standard (ICS), which is being developed and is not planned to be completed until 2025.

An entity-based capital surcharge for systemic risk should be aligned with the basic capital requirement (BCR) and HLA. The HLA mainly addresses the 'too big to fail' risk of G-SIIs, and does not address activities which are small on a global scale but large on a national scale, nor other potential macroprudential risks such as procyclical investment behavior, except for measures addressed to the global systemically important insurers (ESRB, 2015a).

Currently, the formerly known non-traditional non-insurance (NTNI) activities are emphasized in the calibration of the HLA. This is in accordance with the goal to provide disincentives to carrying out activities that pose a threat to the financial system (IAIS, 2015). However, after the ICS has been developed, the

calibration and structure of the HLA will be reviewed and may be revised. Hence, the final specificities of the HLA are not clear yet.

In case of an activity-based capital surcharge, there is a strong link with the development of an activity-based approach towards systemic risk by the IAIS. Hence, this strongly requires alignment with the developments on the global level if the IAIS also develops activity-based capital surcharges.

In case a capital surcharge for systemic risk would lead to extra capital charges for (groups of) insurers, this capital cannot be used for other purposes. The costs of a capital surcharge for systemic risk would however greatly depend on the calibration of the instrument. Therefore, it is not possible to estimate the costs of this instrument at this point in time.

The use of targeted capital surcharges may create a risk of spill-overs into other areas. There would need to be consideration of how insurers would react to the increased capital requirements. Furthermore, the application of such a tool is challenging in terms of its calibration and its applicability.

The calibration of a capital surcharge for systemic risk depends strongly on whether the add-on is entity-based, activity-based or behavior-based. In case of an entity-based capital surcharge, an identification methodology of systemically important insurers is required, whereas an activity-based capital surcharge would require the identification of certain activities and a corresponding capital surcharge calibration. The calibration of behavior-based capital surcharge would be more challenging, given that it is not easy to identify, specifically on an *ex-ante* basis, the point in time and the circumstances in which a capital surcharge would prevent or shape the behavior of undertakings. Once the NSA and/or the relevant authority in charge of macroprudential policy has concerns

that a certain source of systemic risk might be building-up in the market, they should discuss with the supervisor on the course of action to address those risks.

Furthermore, on the one hand, it is important that the new tool is able to capture specific national features in the different markets. At the same time, however, there is a need to ensure a level playing field in the EU. This trade-off is fundamental to avoid fragmentation in the EU.

- **Preliminary conclusion**

Although difficult to calibrate, a capital surcharge for systemic risk has poten-

tial to be developed as a macroprudential tool. Its design deserves further consideration. The main merits are that it might help addressing 'too-big-to-fail' (in case of an entity-based approach), it might give better incentives as insurers pay a price for undertaking activities with potential to pose systemic risk (in case of an activity-based approach), and it may also discourage risky behaviour by insurance undertakings.

The tool interacts with existing legislation as well as with the work that is currently being developed by the IAIS, which should be taken into account when designing the tool.

3. Liquidity-based tools

The background is a dark blue gradient. A prominent white diagonal line runs from the top-left towards the bottom-right. In the upper-left quadrant, there is a faint, light blue grid pattern. On the right side, there is a stylized representation of a flag with horizontal stripes and stars, rendered in a lighter blue color. The text '3. Liquidity-based tools' is centered in the upper half of the image in a white, sans-serif font.

• Objective of liquidity-based tools

Liquidity risk in insurance is defined by the IAIS as the ‘uncertainty, emanating from business operations, investments or financing activities, over whether the insurer will have the ability to meet payment obligations in a full and timely manner in current or stressed environments’.¹³ Given that liquidity (risk) is a greater concern for banking institutions, the micro- and macroprudential policies that cover liquidity are much more advanced in banking than in insurance (ESRB, 2015b).

Due to the characteristics of traditional (life) insurance business, liquidity risk is generally not considered as a material risk for insurers. The inverted production cycle creates a stable source of funding for the insurers. Traditional insurers have an opposite position as banks when considering their involvement in maturity and liquidity transformation. Typically, insurers will provide liquidity to the markets by transforming longer term and less liquid liabilities into shorter term and more liquid assets.

From that point of view, liquidity risk in insurance can be described as a low probability (but potentially high impact) type of risk. As explained in EIOPA (2018a), under certain circumstances insurers could be faced with liquidity concerns, e.g. due to surrender arbitrage or surrenders due to solvency problems because unsustainably high guarantees in a low interest rate environment were given. Unlike for solvency concerns for insurers, a liquidity crisis requires immediate action in order to prevent a potential failure of the insurer.

Insurers with illiquid assets and liquid liabilities are more exposed to liquidity risk. The characteristics of an insurer’s products will determine the liquidity of their liabilities. Products without tax benefits, fiscal penalties, lapse fees or

market value adjustment (bank-like product) are more likely to be surrendered. Rising interest rates can increase the incentive for the policyholder to surrender.

A sudden and unforeseen increase in surrenders (mass lapses) or an extreme natural catastrophe event could initiate or reinforce a downward spiral in the bond and equity markets as the insurer may have to sell a large part of its asset portfolio to fund the cash outflows (fire sales).

A downturn of the financial markets could impact the liquidity of the asset portfolio of the insurer, particularly if the insurer holds derivatives which are generally subject to margining requirements which require the posting of liquid assets as collateral. In that case it will be difficult to sell assets quickly without impact on the prices. At the same time this downturn could create doubts in the market on the solvency and/or liquidity position of an insurer which in turn will further increase the incentive for policyholders to lapse (feedback loop). Supervisors could be faced with difficulties to act in a timely manner given the absence of a standardised view on the liquidity situation of an insurer.

In these types of scenarios, liquidity-based instruments would contribute to achieving the operational objective of discouraging excessive involvement in certain products and activities. Furthermore, liquidity requirements increase the resilience of insurers against liquidity risk. When stricter requirements are applied to systemically relevant insurers, they also contribute to limiting the risk of a failure of G-SIIs or D-SII (ensuring sufficient loss absorbing capacity and reserving).

This section follows a step-by-step approach to address liquidity risk. It first covers possible measures for enhanced reporting. Afterwards, it analyses other options for enhanced monitoring as well as the power to impose liquidity

¹³ See IAIS, Guidance on Liquidity Management and Planning (2014).

requirements. Given the interactions, this section should also be considered together with the liquidity risk management plan, discussed in section 5.4.

- **Interaction with Solvency II**

Liquidity risk is only partially covered by the current regulatory framework. Solvency II is a capital-based framework and focusses primarily on solvency, and not specifically on liquidity. Solvency II relies on Pillar II requirements, such as the Prudent Person Principle (PPP), and the liquidity plans required when using the matching adjustment and volatility adjustment to ensure insurers manage their liquidity risk. Article 44 of the Solvency II Directive addresses risk management, stressing the areas that need to be covered. Liquidity and concentration risk management are among those areas explicitly listed. However, there are no quantitative requirements covering liquidity risk. Furthermore, the quantitative reporting does not contain all necessary information for the supervisor to be able to fully assess liquidity risk from a quantitative perspective, which makes it difficult to monitor liquidity risk at sector level for macroprudential purposes.

It is clear, however, that the risk management framework of the insurer is required to cover liquidity risk. In addition, in case they apply the volatility adjustment and matching adjustment, a liquidity plan projecting the cash flows of the assets and liabilities shall be in place.

The interaction between (macro) liquidity tools and Solvency II seems to be rather limited. However, tensions

could occur when the goals of Solvency II and the liquidity tools are not perfectly aligned. From that point of view, there should be a close connection between the micro- and macroprudential approaches.

3.1. Additional reporting on liquidity risk

- **Description of the tool or measure**

A prerequisite to any kind of micro or macro tool is the availability of a comprehensive and reliable set of indicators that will serve to underpin and guide the decisions on the design, calibration and activation of a tool. The existing QRTs seem to have gaps in data for identifying and monitoring liquidity risk. For instance, there is a need for more data on the optional features included in the insurance products. In a first step of the step-by-step approach, this issue should be further investigated. This should improve the understanding of the lapse behaviour of the policyholder which drives the liquidity of the technical provisions.

These additional reporting requirements could be implemented in a proportional way focussing on the G-SII's and/or on the insurers that are involved in products or activities which are more exposed to liquidity risk.¹⁴

The aim of enhancing the liquidity reporting is to be able to identify activities or products that are more prone to liquidity risk and that, as a collective reaction by undertakings, may exacerbate market price movements in certain circumstances.

¹⁴ Reporting on other activities that affect insurers' liquidity needs should also be considered. For example, understanding whether an insurer's derivative portfolio will go in or out of the money in reaction to certain stresses would be helpful to understand insurer's liquidity needs in a stress.

Liquidity-based tools	Main source(s) of systemic risk	Operational objective(s)
Additional reporting on liquidity risk	<ul style="list-style-type: none"> • Involvement in certain activities or products with greater potential to pose systemic risk • Collective behaviour by insurers that may exacerbate market price movements (e.g. fire-sales or herding behaviour) 	<ul style="list-style-type: none"> ➤ Discourage excessive involvement in certain products and activities ➤ Limit procyclicality

• Preliminary analysis

In order to enhance the understanding and monitoring of liquidity risk, certain data gaps should be closed. These additional data requests come with additional (one-off implementation) costs. Regular reporting costs will slightly increase given that more data will be requested. The majority of the data (and the underlying processes to generate it) should, however, already be available at the insurer or, if it is not, may be helpful information for the insurer as well as the supervisor. The additional data requests should be considered in the light of the key risk indicators (KRI) needed to monitor the liquidity risk of the insurers.

From a static, balance sheet perspective, the data collected in the list of assets seems comprehensive and likely contains sufficient information to develop KRI to monitor and assess the liquidity of the assets. For instance, it allows monitoring the evolution of unencumbered high quality liquid assets that can easily and immediately be converted into cash, which would also have to be defined.¹⁵ However, the low frequency and late availability of the list of assets reduces its information value for liquidity purposes. A more frequent and immediate reporting of key information on the liquidity of the assets could be envisaged.

The data collected through the regular reporting on the derivatives positions

and transactions, although it contains some information that allows a certain monitoring, could be enhanced to provide additional information on the specific use of derivatives. This would allow predicting how an insurer's balance sheet will react to a stress (and any changes in liquidity needs that may occur as a result). The further development and exploitation of the European Market Infrastructure Regulation (EMIR) database could lead to additional insights on the liquidity risk of derivatives and should thus be taken into account.

There is, however, a need for more data on the liquidity of the liabilities and its most relevant underlying drivers. For life insurance these include the need of capital of the policyholders, the options and penalties embedded in the contract and the fiscal regime that is in place. This additional data should allow the development of KRI that capture the liquidity of the liabilities. It should be possible to classify the technical provisions into different buckets according to their liquidity. Examples of elements that could impact the liquidity of a contract (and thus the technical provisions) are:

- Fixed or variable premiums
- Possibility for withdrawals and/or policy loans
- Exit fee and/or market value adjustment upon surrender
- Fiscal penalty upon surrender
- Tax deductibility of the premium
- Exemption of withholding tax upon surrender
- Guaranteed interest rate on the reserve and future premiums
- Time to maturity and/or duration
- Profit sharing (policy)

¹⁵ High quality liquid assets are currently not defined in insurance. The definition in banking may serve as a basis for further work (Article 7 of Commission Delegated Regulation (EU) 2015/61 of 10 October 2014 to supplement Regulation (EU) No 575/2013 of the European Parliament and the Council with regard to liquidity coverage requirement for Credit Institutions).

This type of classification could be done at product level as long as the underlying contracts have similar (liquidity) characteristics.

A more dynamic view on liquidity could be considered by looking at the actual and/or projected cash flows of an insurer over different time horizons. The reporting of actual cash in- and outflows over a relatively short period of time should help detecting the deterioration of the liquidity position of an insurer. The frequency of this reporting could be adjusted depending on the perceived risks. The data collected in QRT S.05 (premiums, claims and expenses by line of business) can serve as a starting point but has some limitations (e.g. expenses are not always a cash outflow). Also, the low frequency and late availability of the data reduces its information value for liquidity purposes. As recommended by the IAIS,¹⁶ current and possible future liquidity inflows and outflows (e.g. premiums, claims and expenses, surrender cash flows), should be aggregated and broken down into liquidity sources and liquidity needs.

Comparing the projected asset and liability cash flows over a longer period of time will increase the understanding of future cash flow needs and help detect potential liquidity gaps or mismatches. This type of analysis would require at least additional data on the asset cash flows. Particular attention should be given to the use of derivatives and the potential impact on the liquidity of an insurer.

• Preliminary conclusion

Reviewing or extending certain areas of the regular reporting in order to increase the amount, speed or frequency of liquidity related data deserves to be further examined in the context of additional (macro) prudential tools for insurers. A step-by-step approach should be followed with regard to liquidity-based tools. In a first step, the focus should be on the identification of poten-

tial data gaps. These gaps, which have been introduced, should be addressed in-depth first in order to be able to better monitor and assess liquidity risks in a second step. The additional data requests should be considered in the light of the KRI needed to monitor the liquidity risk of the insurers.

3.2. Liquidity risk ratios

• Description of the tool or measure

The monitoring and managing of liquidity risks must be covered by the risk management framework of the insurer and should receive even more attention when the insurer makes use of the matching adjustment or the volatility adjustment.

In case liquidity risk is considered material by the insurer, it must also be covered in the ORSA. This would imply that the insurer has to quantify its liquidity risk both in a normal and stressed situation. The liquidity resources and liquidity needs should be projected not just for the expected outflows but also for potential outflows in stressed conditions (e.g. mass lapses). The ORSA should also reflect on the potential liquidity impact from derivatives. Contingency plans should be in place to mitigate the impact of a liquidity crisis.

Supervisors need to develop their own risk assessment framework to monitor and assess the liquidity risk present at micro and macro level. This should enable them to better understand and challenge the analyses and assessments done by the insurers within their risk management framework and their ORSA.

The central element of the risk assessment framework should be a comprehensive and meaningful set of key risk indicators that adequately cover the different aspect of liquidity risk. This should provide a better overview of the activities or products that companies are involved in and anticipate potential collective behaviours.

¹⁶ *Ibidem*.

Liquidity-based tools	Main source(s) of systemic risk	Operational objective(s)
Liquidity risk ratio	<ul style="list-style-type: none"> • Involvement in certain activities or products with greater potential to pose systemic risk • Collective behaviour by insurers that may exacerbate market price movements (e.g. fire-sales or herding behaviour) 	<ul style="list-style-type: none"> ➤ Discourage excessive involvement in certain products and activities ➤ Limit procyclicality

Supervisors shall also consider liquidity risk from a jurisdiction-based perspective by investigating potential externalities generated by liquidity distress experienced simultaneously by a sufficiently large number of insurers.

Entity based approaches as liquidity planning or sensitivity analysis to liquidity risk contained in the ORSA might not account for the potential impact on the markets generated by the sales of specific assets. The footprint generated by the first round of sale might indeed generate a reduction of the prices in the affected markets. Insurers will be in the unfavourable position of selling their assets at punitive terms creating detrimental effects both on capital and liquidity position.

• Preliminary analysis

The assessment of the liquidity of an insurance company can be a complex exercise. The liquidity of the assets shall be evaluated together with the liquidity of the liabilities, namely the time to maturity of the outstanding portfolio and the presence of product characteristics (e.g. penalties) that might limit the incentives of policyholder to lapse.

The (extended) Solvency II reporting and the financial statements of an insurer are a vast source of data that can be used to construct indicators that capture liquidity risk affecting the whole market. The indicators can focus on the solvency or statutory balance sheet or the cash flows and will have to be clearly defined when developing the framework. Several potential indicators that are typically used for financial analysis purposes:

- Liquid assets/technical provisions

- Liquid assets/liquid liabilities
- Unencumbered assets/total assets
- Liquid assets ratio¹⁷
- Liquidity resources/liquidity needs
- Short term liquidity resources/short term liquidity needs
- Lapse ratio
- Gross written premium/surrenders

Monitoring these indicators will allow supervisors to assess the potential short term or longer term liquidity risks at entity or market level and the evolution over time. The indicators could be linked to thresholds to create an internal liquidity risk dashboard (e.g. traffic light system).

¹⁷ This indicator is included in the EIOPA Risk Dashboard and compares the amount of liquid assets on the balance sheet to the total assets (excluding assets held for unit linked contracts). In order to arrive at the amount of liquid assets, each asset item is attributed a weight that reflects the liquidity characteristics of this balance sheet item. This weight ranges from 0 (very illiquid item) to 1 (very liquid item).

Box 4: Liquidity risk monitoring: Belgian framework

Following the sovereign crisis in 2011, the National Bank of Belgium (NBB) started monitoring liquidity risks for the major players on the market. In 2014, the reporting was formalised, the scope was extended to all insurers with traditional life activities and a monitoring framework was set-up. This was supported by two observations: the persistent downward trend in the volume of traditional life insurance premiums and the increased share of illiquid assets of the Belgian insurers.

The NBB receives a separate quarterly liquidity reporting from all life insurers with a traditional life activity. The content of the reporting is currently under review to avoid asking for data already available under Solvency II reporting. The reporting is split in four components:

1. Cash flow data
 - a) Gross premium
 - b) Surrenders
 - c) Other cash outflows
2. Liquid assets
 - a) Cash, bank deposits
 - b) Government bonds
 - c) Specific exposures (central banks, multilateral development banks, international organisations)
 - d) Non-financial corporate bonds (haircut applied)
 - e) High quality covered bonds (haircut applied)
3. Liquidity characteristics of liabilities
 - a) Individual life insurance: tax advantage on premium, fiscal penalty upon surrender, market value adjustment, without penalties
 - b) Group life insurance: free of premium, active contracts, other investments with liquidity risk
4. Investments with liquidity risk
 - a) Derivatives (interest rate swaps, currency hedging, credit default swaps, etc.)
 - b) Repos, securities lending, etc.

To permit integrated monitoring of the liquidity risk, the NBB developed a risk assessment framework based on a set of key risk indicators. Those indicators focus on the trend in incoming and outgoing cash flows, the trend in the liquid assets and liabilities, and finally, the trend in exposures to instruments and derivatives with a potential liquidity risk. These three groups of indicators result in a more systematic monitoring of the liquidity risks of individual insurers and of the sector as a whole.

1) Surrenders to premium volumes

The evolution of the surrenders and the premium volumes is captured through two ratios:

Ratio	Scorecard
$\text{Surrender ratio} = \frac{\text{Surrenders}}{\text{Premium volume}}$	<div style="background-color: green; padding: 2px;">< 50%</div> <div style="background-color: yellow; padding: 2px;">[50%;100%]</div> <div style="background-color: red; padding: 2px;">>100%</div>
$\text{CF ratio} = \frac{\text{Surrenders} + \text{Other outgoing}}{\text{Premium volume}}$	<div style="background-color: green; padding: 2px;"><75%</div> <div style="background-color: yellow; padding: 2px;">[75%;150%]</div> <div style="background-color: red; padding: 2px;">>150%</div>

2) Liquid assets vs. liquid liabilities

A second set of liquidity indicators for the life insurance sector is a measure of the liquidity of the assets and liabilities, which is captured by the following ratio and scorecard:

Ratio	Scorecard
$\text{Ratio} = \frac{\text{Liquid assets}}{\text{Liquid liabilities}}$	<div style="background-color: green; padding: 2px;">>200%</div> <div style="background-color: yellow; padding: 2px;">[100%;200%]</div> <div style="background-color: red; padding: 2px;"><100%</div>

3) Investments with a potential liquidity risk

The final set of liquidity risk indicators looks at the exposures of instruments with a potential liquidity risk. These instruments comprise derivatives and other liquidity-related instruments such as repos and liquidity swaps. The ratios compare the notional value of the instruments to the market value of the total investments:

Ratio	Scorecard
$\text{Ratio} = \frac{NV \text{ derivatives}}{MV \text{ all investments}}$	
$\text{Ratio} = \frac{NV \text{ liquidity related instruments}}{MV \text{ all investments}}$	

So far, the liquidity risk monitoring did not lead to direct macroprudential measures. However, the findings that emerged from these analyses regarding the significant reduction in premium volumes and the growing number of individual life insurance contract surrenders at market level, gave rise to a strategic review and recommendations on the future of the individual life insurance sector in Belgium. For a small number of undertakings, the results of the analyses led the NBB to adopt follow-up measures or to carry out on-site inspections.

Insurance liabilities with guaranteed rates could also be broken down into different duration buckets. This information could be considered in relation with the lapse rates of respective liabilities, allowing to assess the sensitivity of the insurance liabilities to the potential increase in the interest rates. Sudden interest rates increase could potentially lead to the increase in the lapse of the policies with lower guaranteed rates which could potentially lead to the massive surrender payment and have an impact on the liquidity.¹⁸

Outliers can be identified by benchmarking the results of the insurers with those of the market or peers. Benchmarking can also be an input when defining the different thresholds of the dashboard.

Aggregating the results of the individual insurers into a liquidity risk dashboard at market level will help the supervisor to monitor the level of risk and the underlying trend and to assess the potential macroprudential implications of liquidity risk. Identified vulnerabili-

ties could then be addressed by micro- and/or macroprudential tools.

The tools to address liquidity risk within Solvency II are limited given that the framework is capital-based and does not include quantitative requirements for liquidity, given that this is not a major risk in insurers' traditional business model. According to the Solvency II Directive, ORSA has to cover liquidity risk if deemed material by the insurer and should be a valuable source of information. In the same vein, the PPP includes the liquidity aspects of investments and has to be respected by the insurers. However, the principle-based nature of this requirement and the lack of clear definitions and indicators on liquidity make it a challenging task for the supervisor to verify the compliance of insurers with these requirements. In order to mitigate a liquidity risk identified at market level, the supervisors will have to rely on the implementation of supervisory actions at individual insurer level. Stress-testing focused on liquidity could also be considered (see Box 5).

¹⁸ A similar effect could also be possible in the case of unit-linked products.

Box 5: Liquidity stress-testing

Liquidity stress testing is a tool used to assess the impact of adverse scenarios on the liquidity position of individual insurer or of the market. It allows the supervisor to identify potential vulnerabilities that should be addressed either at micro level or at macro level and thus reinforces the resilience against liquidity risk.

Solvency II does not provide a harmonised view on the liquidity position of an insurer. This implies that there are no predefined regulatory indicators that reflect the liquidity position of the insurer in a pre-stress situation and that could be used in a liquidity stress test to calculate the impact of an 'adverse liquidity scenario'. Also, the exposures of the insurers towards liquidity risk are not apparent from the SII reporting.

Liquidity stress testing would require the selection of one or more indicators that adequately reflect the liquidity position of the insurer. The design and narrative of the scenario should be taken into account when choosing these indicators. The key risk indicators used by the supervisor to monitor liquidity risk (see section 3.3) can serve as guidance.

A more granular view on the gross exposures of insurers to liquidity risk (extended reporting) would be beneficial for the design of the stress scenarios, the validation of the results and the understanding of the underlying drivers of the impact of the scenarios.

Several relevant scenarios can be thought of, which would test potential liquidity stresses of the assets and/or liabilities. A frequently discussed potential scenario is that of a mass lapse event driven by a sharp and sudden increase in yields. This scenario would unexpectedly increase the liquidity needs of the insurers while at the same time the value of their outstanding investment portfolio to cover these outflows would decrease substantively due to the increase in yields and thus creating both liquidity and solvency problems.

• Preliminary conclusion

As mentioned before, in a first step, the extent to which existing reporting requirements would need to be enhanced to allow an effective monitoring of liquidity risk should be carefully analysed, also taking into account the costs induced to the industry and to supervisory authorities in implementing additional reporting requirements. Once the reporting requirements have been enhanced, in a second step, a risk assessment framework based on prudential liquidity indicators could be developed that captures the level of liquidity risk. This requires the definition of relevant ratios as well as thresholds that, once breached, could trigger supervisory action, essentially at micro-prudential level. The potential consequences on the markets of liquid assets from creating some kind of ratings for ratio purposes, even just as a monitoring tool should also be considered. If deemed necessary these indicators can be discussed in the context of the liquidity risk management plans (see section 5.4).

3.3. Liquidity requirements

• Description of the tool or measure

Liquidity-based requirements may differ in their design and scope of application, ranging from time-varying additions on top of minimum requirements to stricter requirements for systemically important financial institutions.

Liquidity tools can address both the structural and the cyclical aspects of liquidity risk. The structural dimension is covered by the development and implementation of minimum requirements which can also serve macroprudential purposes. During times of stress these minimum requirements could be relaxed. A time-varying dimension can be added to take into account changes in the financial cycle and to avoid pro-cyclical behaviour by the liquidity requirements.

Minimum liquidity requirements aim at reducing the structural dimension of liquidity risk by introducing formal constraints to be respected by the insurers. They can be of a micro- or macropru-

dential nature depending on the scope of the measure. The design, calibration and activation of any type of measure should be based on a comprehensive and reliable set of key risk indicators (see previous section) and the individual liquidity needs of the insurer.

One possibility is to directly link one of these KRI to a minimum requirement.

The main sources of systemic risk addressed and the operational objectives pursued coincide with the other tools.

Liquidity-based tools	Main source(s) of systemic risk	Operational objective(s)
Liquidity requirements	<ul style="list-style-type: none"> • Involvement in certain activities or products with greater potential to pose systemic risk • Collective behaviour by insurers that may exacerbate market price movements (e.g. fire-sales or herding behaviour) 	<ul style="list-style-type: none"> ➤ Discourage excessive involvement in certain products and activities ➤ Limit procyclicality

EU rules introduce several ways to address liquidity concerns in the banking sector. For example, the liquidity coverage ratio (LCR) requires banks to hold a minimum of high-quality liquid assets to cover their liquidity needs in a stress scenario over a period of one month. The net stable funding requirement (NSFR), in turn, seeks to promote stable funding structures in relation to the composition of their assets and off-balance-sheet activities in a time horizon of one year.

• **Preliminary analysis**

When taking a balance sheet view on liquidity, a minimum requirement could be imposed, linking to the liquid liabilities coverage ratio. This coverage ratio identifies liquid assets and liabilities on the balance sheet and introduces a minimum threshold that requires insurers to hold liquid assets in excess (of x%) of their liquid liabilities.

This minimum liquid liabilities coverage ratio reduces the reliance on relatively illiquid assets to fund liquid liabilities, and therefore diminishes the risk of fire sales when a mass lapse event would occur. To the extent that off-balance sheet positions affect the liquidity of the assets or liabilities, they should also be considered when developing this measure.

When taking a cash flow view on liquidity, a minimum liquidity (or cash) buffer could be envisaged. This minimum liquidity buffer will increase the ability of insurers to cope with expected and unexpected cash outflows should they occur. The calibration should take into account the projected liquidity needs over a period of time (e.g. 1 month) in a stressed situation. This buffer will increase the resilience of the insurer in case of a mass lapse event which should allow for more time for the supervisor to act.

The design, calibration and implementation of liquidity-based tools imply that a performant risk assessment framework has been set up by the supervisor. Liquidity-based instruments are more complex to develop and more difficult to operationalise for insurers and are therefore costlier to implement than the other liquidity measures.

This can have several potential side effects. For example, specific liquidity requirements may affect the long-term investment strategy of insurers and have an impact on their asset-liability management (ALM) approach. Opportunity costs would arise in case certain minimum requirements would be set. In that case, insurers could be compelled to invest in lower yielding liquid assets to comply with a coverage ratio instead of investing in less liquid, high-

er yielding assets. From that point of view, liquidity requirements may lead to a decrease of profitability that could reduce the own fund of undertakings, especially in a low yield environment.

Another side effect of liquidity-based tools may be a further increase of exposure toward high quality liquid assets which could lead to excessive concentration on certain asset classes or geographical regions. It could also have significant impact on asset allocation by insurers and other holders of relevant assets, depending on how the liquidity of different assets are ranked.

• Preliminary conclusion

Liquidity requirements should not be further considered at this stage. Following the step-by-step approach, the potential development of minimum liquidity requirements might be considered more in-depth only as a final step, once reporting requirements have been enhanced and a risk assessment framework has been put in place. However, there is no evidence yet of material liquidity risk at macro level that would justify the development and implementation of binding liquidity requirements for insurers.¹⁹

The development of a liquidity risk assessment framework instead will provide new insights on the liquidity risks present at micro and macro level and could provide evidence of (increasing) liquidity risks. The international developments in this field should therefore be closely monitored. For example, for systemic insurers, the IAIS issued guidance in its policy measures which require G-SIIs 'to have adequate arrange-

ments in place to plan for and manage liquidity risk for the whole group'.²⁰

3.4. Temporary freeze on redemption rights

• Description of the tool or measure

Sometimes exercising the redemption rights of insurance contracts is not in the best interests of the policyholder or the wider financial sector. A decision leading to forbid lapses would give the vulnerable entity or entities some time to implement necessary measures to reduce their liquidity risks. In order to avoid conflicts with the major goal of insurance supervision – the protection of policyholders – forbidding lapses would need to only be allowed in emergency situation, where duly justified.

Indeed the announcement of the entity's difficulties can create an incentive for savers to redeem their contracts early and subscribe to new contracts with a healthier competitor. If all subscribers of a given company simultaneously redeem their contracts, the life insurer will face liquidity shortfall, as it holds some assets on a long maturity, and this could lead to unnecessary destruction of value.

At the level of the market or if applied to systemically important institutions, such a tool would give time to all potentially impacted insurers to implement necessary measures without behaving in a procyclical way. At the same time, it would also avoid pointing out one insurer that is particularly more vulnerable than the others.

Before making the decision of temporarily limiting or freezing redemption rights for the whole market, authorities in charge of the macroprudential policy should pay special attention to potential side effects on the whole economy and effects on the rights of policyholders. It should be used in very

¹⁹ Emphasis should be put in the underlying causes of liquidity risk. For example, aggressive pricing could be a source of liquidity problems to the extent that it may lead to massive acquisition of policyholders that may lapse at some point in time (Geneva Association, 2012). Liquidity requirements may then be proposed to mitigate the risk of bad under-pricing, which is in reality the source of the problem.

²⁰ IAIS, Guidance on Liquidity Management and Planning (2014).

exceptional circumstances only (i.e. in emergency situations), and after careful consideration, including interconnections with other parts of the financial system.

For example, in France, the High Committee for Financial stability (HCSF) was granted the possibility to temporarily limit lapses to part of or the whole portfolio. Such a decision applies to the

whole market or part of it and can be made only in very exceptionally severe conditions and for a period of six months at the most. The HCSF is allowed to use this power only to prevent risks representing a strong threat for the financial health of the whole insurance market or financial system and needs to take into account in its decision the financial stability and the interests of the policyholders and beneficiaries.

Liquidity-based tools	Main source(s) of systemic risk	Operational objective(s)
Temporary freeze on redemption rights	<ul style="list-style-type: none"> Collective behaviour by insurers that may exacerbate market price movements (e.g. fire-sales or herding behaviour) 	<ul style="list-style-type: none"> Limit procyclicality

Some measures could be considered, according to the severity of the observed situation:

- Establishment of gates: In case of exceptional circumstances, and in order to preserve the public interest, assets managers are allowed to level off the surrender rate, for a limited period of time. When the surrender rate reaches a predetermined threshold, the assets manager caps the surrenders, applying a fairness principle to every investor. A similar mechanism could be implemented for life insurers.
- Temporary suspension of redemption rights for the whole market: When making such a decision, the competent authority needs to take into account not only the financial stability but also the interests of the policyholders and beneficiaries. Such a decision can be made only in very exceptionally severe circumstances and foresee an incremental application, for instance by delaying only lapses that exceed certain thresholds (to preserve the rights of the most modest savers).

• **Preliminary analysis**

Temporarily forbidding lapses is likely to avoid life insurers to be over-impacted by a run to insurance. For example, it could be considered in case of

a sudden and sharp increase in interest rates that leads to massive runs on the insurers. Indeed, under the assumption of rational financial markets, consumers can have an incentive to surrender their contracts with a very low guaranteed rate to invest their money on more profitable savings products if interest rates sharply increase in a very short term. Another possible case of a run on insurance could materialise with the failure of a major insurer leading to a crisis of confidence towards the whole insurance market, possibly turning into full-blown distress on financial markets.

In any case, to be able to reimburse savers, life insurers are forced to sell assets. In these circumstances, even if their solvency situation is sound, they can reveal shortages of liquid assets and not be able to pay their liabilities as they fall due. Such situations could also force insurers to sell their assets in sub-optimal conditions, which will worsen their financial position. Restraining lapses during a limited period of time could allow life insurers further time to optimise their assets' liquidation, which in the end proves profitable for both insurers and policyholders.

However such a measure is highly sensitive and may clash with consumer

protection principles. Indeed, it will deprive to a certain extent policyholders of their savings, at least at a short term. As a result, it be applied only in very exceptional circumstances, to prevent risks representing a strong threat for the financial health of the whole insurance market or for the financial system and for a limited period of time.

Especially if it applies at the market-wide level, freezing or limiting redemption rights should also be a measure of last resort as it contravenes to contracts rules between policyholders and insurers. The correct timing to apply this measure is also key as self-fulfilling prophecies may materialise where policyholders expect the prohibition of lapses. Thus, they may accelerate their behavior in order to anticipate the prohibition, resulting in a liquidity crisis of the insurers.

Measures such as temporary limitation / delay in payment of surrender values could force policyholders to differ their consumption in time and slow down economic recovery (pro-cyclical effects).

In order to provide a balanced approach, it should be ensured that a thorough analysis about the reasons of lapse (including surrender arbitrage) and the increase of lapse risk is done before any action is taken. Therefore, the ORSA should explicitly require to describe the

analysis of the insurer's vulnerabilities to surrenders beyond a simple looking on the surrender ratios or the lapse risk component of the SCR.

• Preliminary conclusion

The temporary freezing on redemption rights is a tool that, applied at market level or to systemically important insurers, might mitigate the potential procyclical effect of liquidity crises triggered by massive lapses. Its application, however, should be restricted to emergency situations, given that it has an impact on policyholders' rights, and balanced against possible future disruptive effects on the market.

This tool faces potential challenges, which will also depend on whether the tool is applied to one or a few insurers, or applied market-wide or to a considerable sub-se of the market. These challenges are essentially potential legal constraints at national level as well as significant operational challenges. The application of this tool should also consider the developments in the field of recovery and resolution. Indeed, EIOPA's Opinion to Institutions of the European Union on the Harmonisation of Recovery and Resolution Frameworks for (Re)insurers across the Member States already considered the power to temporarily restrict or suspend the policyholders' rights of withdrawing their insurance contract.

4. Exposure-based tools

The background is a dark blue gradient. A prominent white diagonal line runs from the top-left towards the bottom-right. In the upper right, there is a stylized representation of a flag with stars and stripes. In the upper left, there is a faint grid pattern. The text '4. Exposure-based tools' is centered in the upper half of the image.

• **Objective of exposure-based tools**

The liability-driven investment strategies of insurers (i.e. the services they supply in the market) have direct implications on their asset allocations. Similarities in insurance business mod-

els and liability structures, bring similarities also in their asset allocation. However, differences between life and non-life sectors and within these two sectors exist basically depending on the different lines of business pursued by the companies.

Table 3: Investment split – 2017 Q4 Quarterly solo data, excl. unit-linked

	Government bonds	Corporate bonds	Equity	Cash and deposits	Mortgages and loans	Property	Other
EU/EEA	31.58%	32.63%	15.35%	4.91%	5.23%	2.25%	8.05%
AUSTRIA	25.76%	31.01%	21.14%	3.69%	3.87%	6.84%	7.69%
BELGIUM	49.76%	22.96%	6.40%	2.99%	10.66%	2.84%	4.38%
BULGARIA	53.51%	17.72%	10.11%	12.19%	0.52%	2.90%	3.06%
CROATIA	64.51%	4.12%	8.05%	5.81%	7.17%	7.93%	2.42%
CYPRUS	18.69%	30.63%	19.45%	15.04%	2.56%	5.20%	8.44%
CZECH REPUBLIC	50.48%	27.57%	7.72%	6.52%	0.84%	0.19%	6.68%
DENMARK	18.04%	36.92%	31.16%	3.01%	3.60%	2.24%	5.04%
ESTONIA	28.79%	49.76%	1.64%	14.46%	0.53%	0.00%	4.83%
FINLAND	11.50%	38.64%	16.69%	8.56%	4.82%	6.25%	13.54%
FRANCE	32.75%	35.66%	12.27%	3.08%	1.82%	2.38%	12.04%
GERMANY	25.28%	37.34%	20.46%	3.76%	5.36%	2.03%	5.77%
GREECE	60.14%	21.17%	4.45%	6.11%	1.05%	2.21%	4.86%
HUNGARY	79.12%	3.68%	4.70%	5.21%	0.27%	0.09%	6.91%
ICELAND	29.53%	15.96%	38.74%	4.72%	1.05%	0.08%	9.92%
IRELAND	30.67%	31.71%	4.34%	23.09%	3.91%	1.35%	4.93%
ITALY	51.65%	21.06%	13.64%	2.68%	0.88%	1.07%	9.00%
LATVIA	57.52%	14.40%	2.68%	21.33%	0.56%	1.13%	2.38%
LIECHTENSTEIN	23.20%	30.99%	7.36%	29.02%	4.89%	0.14%	4.40%
LITHUANIA	68.90%	12.25%	2.81%	8.98%	1.08%	0.95%	5.02%
LUXEMBOURG	31.89%	35.33%	8.82%	10.41%	6.95%	0.91%	5.69%
MALTA	28.87%	19.19%	7.87%	16.36%	8.33%	1.92%	17.45%
NETHERLANDS	35.63%	16.52%	6.62%	5.68%	26.71%	2.35%	6.49%
NORWAY	15.43%	45.76%	22.95%	2.42%	8.84%	0.42%	4.18%
POLAND	54.09%	4.60%	24.52%	5.42%	3.49%	0.29%	7.59%
PORTUGAL	48.23%	30.30%	9.54%	6.38%	0.80%	2.55%	2.19%
ROMANIA	70.36%	6.35%	7.81%	11.62%	1.37%	1.51%	0.98%
SLOVAKIA	49.04%	33.42%	4.74%	6.10%	1.35%	0.62%	4.74%
SLOVENIA	38.26%	33.53%	17.67%	3.63%	1.47%	1.84%	3.60%
SPAIN	55.98%	22.15%	6.11%	8.38%	0.84%	2.44%	4.10%
SWEDEN	15.16%	31.38%	34.41%	3.93%	3.22%	3.17%	8.73%
UNITED KINGDOM	21.22%	35.36%	14.99%	10.26%	8.21%	2.66%	7.31%

Source: EIOPA.

NB **Red**: Above 90th percentile **Blue**: Below 10th percentile. It should be noted that the red data cells in the table do not necessarily indicate 'excessive concentration'.

European insurers typically have their assets significantly concentrated in debt securities (although with differences among countries) as bonds provide contractually agreed (fixed) returns, which enable an undertaking's cash flow planning and a proper ALM for liabilities with fixed returns. Among fixed-income assets, European insurers are big investors in corporate bonds (mainly financial²¹), and government.²² European insurers are exposed to derivative instruments and to some extent to real estates; concentration on mortgages loans should also be considered.

Eventually, excessive concentration on and within certain asset classes or geographical concentrations, if not correctly managed or hedged, are considered as source of risk both at micro (for individual insurers) and macro level. This is due to the knock-on effect on the market price of these assets triggered by common reactions and further related consequences (i.e. potential fire sale, herding behavior, but also search for yield). For instance, in case of a wider banking crisis, insurance companies may react by massively selling (fire sales) risky banking investments, negatively impacting the banking assets' prices and aggravating the situation in the banking system (pro-cyclical effect).

Overall, because of the significant funding role insurers play, investment strategies implemented by them are fundamental as they have the potential to destabilise certain markets. The

financial crisis raised the concerns as regards 'large exposures' and their effects for the financial system and debate is still open on the need of and possible additional improvements of policy framework in this respect. There are different options that might be explored for further consideration in this field.²³

Exposure-based tools should essentially seek to mitigate the risk of excessive concentrations as well as potentially dangerous interconnections without compromising the funding role of insurers as institutional investors. From that point of view the aim is not the identification of specific activities as intrinsically systemic. Instead, the focus is on how the exposures are managed by the insurance undertakings (EIOPA, 2018a). Exposure-based tools should seek to contribute to achieving the operational objective of discouraging excessive level of direct and indirect concentrations by fostering investment portfolio diversification.

• Interaction with Solvency II

Solvency II deals with the risk of concentration to a certain extent. It includes concentration risk charges for single-name exposures, which helps limit excessive concentrations and exposures toward a single issuer.²⁴ Moreover, the PPP and ORSA requirements are foundation elements in Solvency II and both are relevant to excessive concentration (see Box 6). As a monitoring tool, it also requires insurance groups to report significant risk concentrations across a wide range of categories.

21 Insurers hold EUR2.2 trillion of total investments in financial instruments issued by the banking sector.

22 ESRB 2015(a).

23 An additional option would be widening the scope of application of tools already set for the GSILs, such as Systemic Risk Management Plan and Liquidity Risk Management Plan. This option is considered in sections 5.3 and 5.4.

24 No risk charges are however included for other types of exposures concentrations, such as sectoral.

Box 6: Solvency II tools to cope with excessive concentrations

Solvency II embeds principles/tools that have been conceived to cope with excessive concentration:

- The market-consistent balance sheet valuation approach is the foundation principle, which affects the entire insurance legislative framework. Under this principle, both assets and liabilities are valued at market value (i.e. the riskiness is already reflected in the price of the securities) and all the risks and their interactions are considered together with mitigation techniques (such as reinsurance and hedging).
- This fundamental principle eventually influences the required capital that should always match the amount of risks taken on by the insurance company. The standard formula within the market module considers risks related to concentration issues although with some differences in the treatment for government bonds, where in fact exposure to government bonds should be properly taken into account by Internal Model users;
- The PPP requires insurers to ensure the security, quality, liquidity and profitability of the investment portfolio (discarding them from any kind of benchmark). It also requires insurers to properly diversify their assets to avoid excessive reliance on any particular asset, issuer or group of undertakings, or geographical area and excessive accumulation of risk in the portfolio as a whole;
- In terms of governance and risk management requirement, including the ORSA, the latter is an essential element of the undertaking's risk management as it has to be carried out independently from the SCR standard formula. In the ORSA, the undertaking must take into consideration all the risks they face, regardless of whether these risks are in the standard formula. Therefore, risks related to investment exposure (including those related to sovereign holdings) have to be assessed and should be managed either by quantitative or qualitative measures. In the investment risk management policy, undertakings must state the company's own assessment of the credit risk of counterparties, including instances where the counterparties are central governments;
- The standard formula users will have to explain their (large) investments exposure within the supervisory review process.²⁵
- To avoid overreliance on credit rating agencies, undertakings are required to develop their own internal credit assessment. This should ensure proper assessment of (large) exposure risks as well.

However, both the PPP and the ORSA are focused on the insurers assessing their own investment strategy based on their own risk appetite, which makes it difficult to address issues of excessive concentration levels at sector level. Insurers may make 'optimal' investment decisions at an individual level, but overall, the sector may be excessively concentrated in particular exposures. The source of systemic risk through 'common exposures' has also been highlighted by the IMF.

The financial crisis also raised concerns as regards large exposures and their effects for the financial system. The debate on the need for further improvements of policy framework currently in place is, however, still open. To this end some other options are assessed in this paper such as the possibility of defining concentration thresholds with

a macroprudential focus or the more straightforward enhancing of the tools already in place such as ORSA and PPP to also take into account macroprudential concerns.

4.1. Concentration thresholds

• Description of the tool or measure

Concentration thresholds imply the definition of some benchmark on (the growth of) certain types of exposures to avoid excessive (direct and indirect) concentrations. Examples of such exposures could be:

- Intra financial assets (e.g. holdings of securities issued by other financial institutions);
- Government or corporate bonds;
- Equity;

²⁵ Articles 244 of Solvency II directive.

Exposure-based tools	Main source(s) of systemic risk	Operational objective(s)
Concentration thresholds	<ul style="list-style-type: none"> Excessive concentrations 	<ul style="list-style-type: none"> Discourage excessive levels of direct and indirect exposure concentrations

- Derivatives;
- Real estate, for example through mortgages and loans;
- Exposure towards single bank(s);
- Exposures to certain geographical areas; or
- Exposures to certain sectors or industries.

The aim of such exposure limits is to avoid excessive concentrations and, as a result, to reduce insurers' vulnerability to systemic risk through common exposures.²⁶

Two issues are worth highlighting. First, insurers' exposure to concentration risk clearly depends on the products they offer (obligations to the policyholders) and hence their individual asset strategies, which vary substantially across countries. Secondly, any kind of thresholds based on geographical grounds might actually go against the spirit of the European Union.

• Preliminary analysis

Raising the level of awareness towards the 'excessive' holding of some kinds of exposures should essentially focus on how these exposures are managed by insurance undertakings. In line with the current Solvency II approach, the emphasis should be put on enhancing risk management practices and, in general, accurate application of PPP, appropriate implementation of own risk assessment functions by the companies so to foster proper diversification and avoiding unintended implications at market level (fire sales, pro-cyclical behavior) especially in time of stress. Due consideration should hence be given to these tools already in place, which were designed to address all these concerns at microprudential level.

²⁶ Identified by the IMF (2016)

In addition, Pillar 3 disclosure plays a significant role.²⁷ As mentioned by the European Systemic Risk Board (ESRB, 2015a), an enhanced disclosure indirectly fosters a certain 'peer' comparison. As a result, it may contribute to mitigate some risks through market discipline. More attention on the quality and comparability of information (also) on large exposure included in the reporting should be considered, as well. The analysts and more in general the market reactions could themselves work as a mitigation tool against risks of excessive not well managed exposure.

When it comes to limits or thresholds, two type could be defined: 'hard thresholds' and 'soft thresholds'. Hard thresholds are limits that cannot be breached. For example, if the exposure limit to a specific asset class is set at a certain percentage of the investment portfolio, undertakings are simply not allowed to exceed this limit.

Soft thresholds are, in turn, less intrusive tools. They are more monitoring in nature. This implies that they could be exceeded, but would raise special awareness of authorities, who would take action as appropriate where they believe there is a macroprudential risk.

This paper essentially focuses on soft thresholds, as hard thresholds do not seem appropriate as macroprudential tools in insurance, as explained in Box 7.

²⁷ ESRB Recommendation 2013/1 on intermediate objectives and instruments of macro-prudential policy: 'Transparency enables market forces to act as a disciplining mechanism on individual institutions' behaviour and enables more accurate pricing of risk within the financial system. Disclosure also has the potential to limit the amplification of stress in the financial system by reducing uncertainty about the size and location of certain exposures and system interlinkages'.

Box 7: Hard (regulatory) thresholds on exposure concentrations

Risk concentration limits on asset allocation are a simple and intuitive way to ensure risk diversification (Eling and Pankoke, 2014). At the same time, however, this power is quite strong, given that it has an impact on strategic decisions of the undertakings. A solid case should therefore be built to impose such limits, which is currently not the case.

Setting hard thresholds on concentration in certain assets, geographical and/or sectoral exposure, etc., could be a discouraging tool when developing an investment policy. It may however be particularly problematic, because of its operational difficulties and potential disruptive macroeconomic implication. Such thresholds would be very difficult to apply in a strict way as in any case they require prior identification of accurate thresholds/limits as well as the type of concentrations to be targeted. It is worth highlighting that insurers' exposure to concentration risk clearly depend on the products they offer (obligations to the policyholders) and hence their individual asset strategies, which vary substantially across the EU. This is why certain degree of supervisory judgement seems fundamental.

Any kind of potential thresholds should be derived from the riskiness of the particular exposition. Otherwise, the insurance companies would be forced (or at least incentivised) to reallocate their financial assets into instruments with a higher market risk exposure.

Furthermore, hard thresholds would also call for an appropriate transitional period in order to avoid any possible cliff effect (which in turn could result in dramatic procyclical effects). It has to be noted that in the past these thresholds did not always refrain insurers from accumulating large exposure where these exposures were deemed appropriate under an ALM perspective. Furthermore attention should be paid to potential indirect effects, i.e. setting thresholds could incentivise a sort of herd into the basket which in turn could result in common behaviour/procyclical reaction.

In summary, setting hard thresholds on exposures would require not only significant operational difficulties and additional work but the implication would potentially be disruptive at macroeconomic level.

Completing the current framework by setting soft thresholds and granting some kind of flexibility in the form of guided discretion at national level to take action in case the aforementioned thresholds are breached (i.e. when it comes to concentration if certain exposure increases dramatically and/or reaches a significant level²⁸) should be further explored. This should, however, be done in a sequential way. In a first step, potential concentrations should be monitored. Defining thresholds for action, i.e. calibrating the instrument, would only be considered in a second step, once a good overview is available. Analysing the need for additional specific instruments should only be done at a later stage, if deemed necessary.

In order not to depart excessively from the principles of Solvency II, the criteria and conditions to be met would

be fixed at EU level and some kind of guided discretion mechanism should be set at first.²⁹ Inclusion of the ability to put in place 'reciprocity arrangements' can help authorities avoid regulatory arbitrage and spillover from tools set at national level. These arrangements can be complex and onerous to implement but there are examples of it working successfully in the banking sector.

• Preliminary conclusion

The risk of excessive concentrations should be addressed on a sequential basis. In a first step, potential concentrations should be monitored. The possibility of establishing certain soft thresholds for action at market level

²⁸ Certain exposures may increase dramatically and/or reach significant level, for example, in case of bubbles or in case of distressed conditions in the market that make these exposures no longer sustainable.

²⁹ In the banking sector, where limits are in place the 'CRD4-CRR package' seeks to find a compromise between the need to ensure the necessary flexibility for NCAs and to avoid regulatory fragmentation. Under this framework, authorities are able to modify for macroprudential purposes risk weights applied to specific sectoral exposures (for example, real estate or interbank ones) and concentration limits applied to large exposures. They have to justify and clearly communicate their decision in that sense.

by national authorities if a certain exposure increases dramatically and/or reaches a significant 'risky level', should be further considered only at a later stage, after a good overview of the potential risks are available. Specific instruments would only be considered at the end of the process if deemed necessary. This may also help filling the gap in the Solvency II framework when it comes to certain concentrations, such as concentrations at sectoral level. In that context, in case the monitoring phase identifies vulnerabilities, proper powers or tools for intervention would need to be available.

Flexibility at jurisdictional level could also better grasp national specificities, such as significant differences in asset allocation amongst insurers in different jurisdiction or different tax regimes. However, on the other hand unintended consequences stemming from i) dissimilar application from various countries which could result in a lack of level playing field, and ii) difficulties in implementation of reciprocation mechanisms make this tool very difficult to operationalise. Guided discretion guidelines and/or constraints at EU level should be set and in any case an impact assessment should be considered to assess all potential side effects.

Focusing on the enhancement of risk monitoring and even more on the strengthening of requirements already in place related to PPP, ORSA and those, which call for a sound ALM seems to be a more straightforward approach. The strengthening of Pillar 2 requirements could be beneficial and easier to integrate in the current framework.

Other additional tools to be further considered are stress-testing and strengthening accountability. Stress-tests focused on exposures could be carried out in two different ways, which are not mutually exclusive.

- By explicitly requesting insurer to consider within the ORSA the stress on some or one exposure to clearly demonstrate how companies would react in case they would be forced to sell those kind of assets under a stress situation. This would mean a certain change in the current approach, which does not envisage an explicit request of specific stresses within ORSA.
- By means of stress test run by supervisors on either reporting information and/or in addition to the information taken from ORSA in general and an ORSA stress test on exposure in particular, once implemented.

Both exercises would give supervisors ground to assess and react to potential systemic risk stemming from excessive concentration in specific asset classes.

Finally, strengthening accountability should be considered as well. Increasing awareness and commitment of senior management and higher should result in a more prudent asset allocation and a proper diversification strategy.

4.2. Enhancement of the ORSA

• Description of the tool or measure

Article 45 of the Solvency II Directive requires that insurance undertakings establish an internal risk management system that includes a procedure for ORSA. This procedure enables each company to estimate its future overall solvency needs beyond regulatory capital requirement (defined either via standard formula, partial internal model or full internal model), taking into account its specific risk profile, the risk tolerance limits approved by the administrative, management or supervisory body, and the risk mitigation strategy. As such, it should contribute to mitigate excessive levels of direct and indirect exposure concentrations.

Exposure-based tools	Main source(s) of systemic risk	Operational objective(s)
Enhancement of ORSA	<ul style="list-style-type: none"> Excessive concentrations Deterioration of the solvency position leading to: <ul style="list-style-type: none"> Failure of a G-SII, D-SII Collective failures of non-systemically important institutions as a result of exposures to common shocks 	<ul style="list-style-type: none"> Discourage excessive levels of direct and indirect exposure concentrations Ensure sufficient loss-absorbency capacity and reserving

Importantly this is not simply an additional supervisory report. On the contrary, it has been conceived to be a fundamental process, which affect the entire organisation; an integral part of the business strategy, which has to be taken into account on an ongoing basis in the strategic decisions of the insurance undertaking.

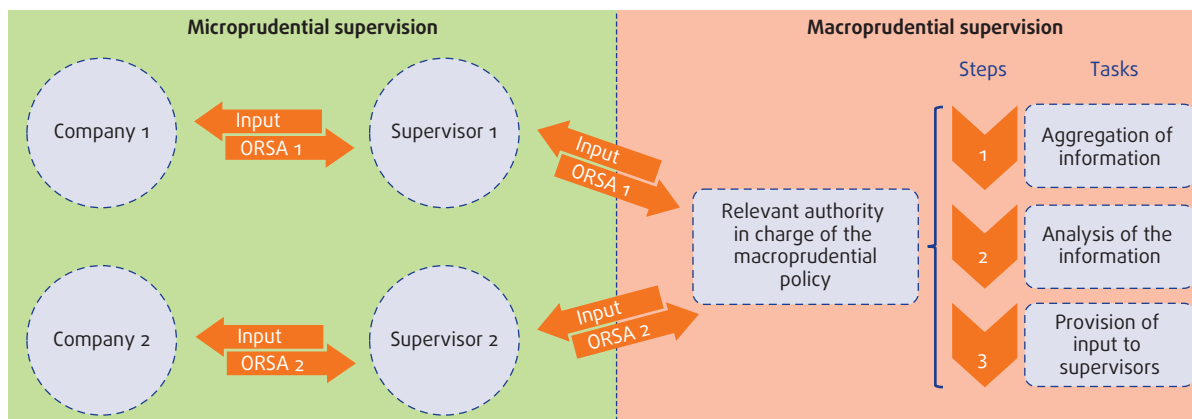
• **Preliminary analysis**

In an ORSA, an insurer is required to consider all material risks that may have an impact on its ability to meet

its obligations to policyholders. In doing this a forward looking perspective is also required. Although conceived at first as a microprudential tool, it could also have a positive macroprudential impact, particularly if the tool is further enhanced to take into account this perspective.

Figure 6 provides an overview of the current microprudential use of ORSA and how the tool could be enhanced from a macroprudential perspective in a given jurisdiction composed of two undertakings.

Figure 6: Incorporating the macroprudential perspective into ORSA



In the current ORSA process (green area), every undertaking regularly conducts its own risk and solvency assessment as part of its risk-management system. The undertakings inform the supervisory authority of the results of each own-risk and solvency assessment as part of the information reported to supervisors. Supervisors then provide feedback to undertakings from a supervisory perspective that should

be considered in the development of future ORSAs and in the risk management system in general.

An enhanced ORSA should include the macroprudential dimension (red area), in order to check the ORSA reports against macroprudential risks. This would supplement the microprudential approach by assigning certain roles and responsibilities to the relevant authority in charge of the macroprudential

policy.³⁰ This authority could carry out three different tasks:

- Aggregation of information;
- Analysis of the information; and
- Provision of input to supervisors from a macroprudential point of view

• **Aggregation of information**

The aggregation of information should be a structured process whereby the relevant authority in charge of the macroprudential policy would receive and compile the individual information provided by undertakings.

In order to be efficient, the authority should be able to easily identify the relevant sections of ORSA. At this stage, however, this is a challenge, given that the ORSA is currently an entity-specific report.

• **Analysis of the information**

Once aggregated, the relevant authority in charge of the macroprudential policy would seek to extract and analyse relevant information from macroprudential perspective. This information would not only be relevant in case of systemically important institutions (G-SIIs or D-SIIs). It could actually also provide the authority with a comprehensive overview of the market, which should help the macroprudential purposes.³¹ With bottom-up information, econometric modeling can assist regulators in identifying, assessing,

monitoring and mitigating risk in global markets.³²

When analysing ORSA supervisory reports, the authority should align general information available with regard to general risks in the national or international financial sector or regarding general financial trends (for example more complex life insurance products) with the information presented by the undertaking concerned in its ORSA supervisory report. This analysis will allow a shift from a purely microprudential adding a macroprudential perspective with a final aim to see if the undertaking has an appropriate understanding and management of external risks.

Based on information included in the ORSA, authorities can develop, among other things, bottom-up methodology for stress testing/scenario analysis that can be effective tools to identify the financial impact detected ‘accumulated risk’ at market level.³³ This process may identify emerging risks not properly captured within regulatory capital adequacy requirements of Solvency II. Additionally, through the collection of qualitative information such as those in the ORSA report for the supervisor, other not identified and potentially risky trends can be detected.

• **Provision of input to supervisors**

As a result of this analysis, the relevant authority in charge of macroprudential policy would provide input to the supervisor on elements to be requested to undertakings to include, in their ORSAs, particular macroprudential risks. This input could:

- Revolve around some of the macroprudential findings resulting from the analysis of previous ORSAs, allowing the follow-up of potential risks identified; and/or

³⁰ As stated in the introduction, the decision process for applying macroprudential policies may differ across the EU, given that there are different institutional models. The discussion of the institutional set up is out of scope of this paper. The term ‘relevant authority in charge of the macroprudential policy’ should therefore encompass all different institutional models.

³¹ There are several suitable procedures for the analysis of ORSA supervisory reports that may be adopted by authorities, such as specialist approach, peer approach or individual undertaking approach). A combination of approaches would also be suitable in order to capture the macro perspective on the risk drivers for the national market or line of business.

³² IAA, Actuarial Viewpoints on and Roles in Systemic Risk Regulation in Insurance Markets – May 2013

³³ *Ibidem*.

- Include new systemic risk items the authority became aware of as part of its regular macroprudential supervision (e.g. resulting from risk dashboards, stress tests, etc.). The idea is for undertakings to consider the external environment (i.e. the potential sources of systemic risk identified) in their risk assessment. This may have an impact, for instance, on the scenarios to be considered by the undertakings, the economic and financial variables used, the analysis of the geographical diversification of the business, etc. Furthermore, at group level, the focus should also be put to the group in the context of the market. Currently, only interlinkages within the group are considered.

The supervisor, which should remain the main liaison with the undertaking and responsible for the microprudential supervision, would include the macroprudential feedback as part of the input provided to companies. Eventually, the ORSA could serve the purpose of improving the intensity and quality of dialogue with supervisor also related to macroprudential aspects and contribute to mitigate these risks.

It should be mentioned that the process described would be part of the regular supervisory process of ORSA carried out by the supervisors. In addition, the to the relevant authority in charge of the macroprudential policy should be able to request specific information in terms of nature, scope, format and point in time, where justified by likelihood or impact of materialisation of a certain source of systemic risk.

A good example of macroprudential risk addressed through an enhanced ORSA could be the risk of excessive concentrations, identified as one of the sources of systemic risk. The ORSA is focused on the insurer assessing their own investment strategy, based on their own risk appetite, which makes it difficult to address issues of excessive concentration levels at sector level. In-

surers may make 'optimal' investment decisions at an individual level, but overall, the sector may be excessively concentrated in particular exposures. With an enhanced ORSA, insurance would be able to have sufficient understanding of potential macroprudential risks, which should be incorporated in their ORSA process.

Furthermore, the relevant authority in charge of macroprudential policy could use the information in the ORSA reports in their analysis of the risk of excessive concentrations from sector-wide perspective. This would provide a useful input to carry out, e.g. sensitivity analysis to abrupt changes in market prices, level of capitalisation of the sector to withstand potential systemic shocks on the asset holdings, etc.

Although ORSA shall not serve to calculate a capital requirement, it would play a relevant role.

- It would raise the awareness of the relationship between the undertaking's current and future risk exposure and the capital needs that follow from that exposure. Furthermore where the insurance or reinsurance undertaking applies the matching adjustment, the volatility adjustment or the transitional measures, they shall perform the assessment of compliance with the capital requirements with and without taking into account those adjustments and transitional measures.
- It also constitutes a central supervisory tool for determining the undertaking's ability to identify and manage risk factors; it provides authorities with undertakings' assessment of the most significant risks, most probable stress scenarios and their strategies. Based on a horizontal assessment of ORSAs received, authorities can plan actions to be taken at market level (i.e. national competent authorities (NCAs) could encourage insurers to hold more capital) in order to persuade them in preserving their

continuous sufficient capitalisation in a forward-looking manner and taking into account all possible risks.³⁴

Box 8 provides an overview of the Italian case, which provides a useful in-

sight on how the current ORSA process could be used to enhance macroprudential supervision. Further experience is needed on whether supervisors need additional tools to be able to monitor these behaviors at an aggregate level.

Box 8: The Italian experience with ORSA

ORSA is a cornerstone of Solvency II framework. In some countries, such as in Italy, the usefulness of ORSA is not only considered from a microprudential perspective, but also from a macroprudential one.

When dealing with the insurance business, a sound and aware risk management and control system is key. It follows that companies, when running the ORSA must consider, among others, impacts related to their investments strategies, which in turn assume a clear understanding of the macroeconomic situation, the financial market environment, the product design, the level risk-taking and so forth.

Undeniably, the ORSA poses a challenge to firms as well as the supervisor. The Italian national supervisory authority (Istituto per la Vigilanza sulle Assicurazioni, IVASS), in preparation of Solvency II, (2014-2016) has gradually implemented the new ORSA tool, asking companies to produce yearly ORSAs in the form of Forward Looking Assessment of Own Risks exercises (FLAOR, based on ORSA principles) in 2014 and 2015 for which a minimum content were set together with the request to consider at least a 3 years-time horizon.

With the entering into force of Solvency II Directive IVASS Regulation 32/2016 was issued (it transposed principles and EIOPA guidelines (GL) on ORSA into national legislation). The regulation detailed a bit more what stated in Solvency II in particular as regards the reference date, transmission time of the ORSA Supervisory Report and most of all a minimum set of content (i.e., what already anticipated within the FLAOR has been reaffirmed). Indeed based on the previous experiences IVASS (in line with EIOPA GL) provided a scheme with the proposal to clearly represent the main information on ORSA and subsequent ORSA outcomes. Importantly, even if IVASS made more explicit through the scheme the minimum information required the undertaking are in any case free to develop the relative contents.

The rationale behind this choice is to gather a thorough assessment which could serve either at micro and at macroprudential level. Indeed by aggregating information received it is possible to detect a) similar/different approaches in managing specific risks by market; and b) common elements that have an influence on the managers choices also under a forward looking perspective, likely to result in common behaviour. Indeed, although the ORSA expresses subjective consideration of risks – as well as subjective management approaches – it reveals attitudes of the operators that may drive or justify some strategic choices.

To assess ORSA reports, an Excel tool has been developed in order to:

- Provide a common reference for different analysis
- Facilitate peer reviews among different companies
- Facilitate analysis through time
- Identify areas needing improvements.

³⁴ Based on the 'EIOPA's Supervisory Assessment of the Own Risk and Solvency Assessment - First experiences' of June 2017, out of 31 National Supervisory Authorities 20 had provided public feedback to the insurance sector about the quality of ORSA reports received by the end of 2016. Following discussions between supervisors and the insurance sector could be held in forums, panels, seminars or workshops. Discussions with industry associations are included here as well.

IVASS Board have been considering the aggregate analysis of ORSA's output to a greater extent. They are an important input for i) regulatory or supervisory actions, ii) additional macro analyses rather than micro interventions triggered by the comparison with market trends. For instance, valuable information could emerge from the comparison between risk appetite and solvency II ratios as recorded at market and solo level; the same holds true for elements not included in the standard formula and considered in the overall solvency need (OSN).

For instance the following elements were requested from companies in a previous run of the analysis:

- *Consideration of the macroeconomic situation and potential sources of systemic risk.* In the first FLAOR/ORSA exercises undertakings were requested to take into account the relative outcomes the remuneration policy (on a best effort basis) and, more importantly, to assess the risks linked to the composition of asset portfolio particularly focusing on the Government bonds. On this last aspect, ORSA has been considered as the best way to monitor sovereign risk and insurers were invited to evaluate in their own risk analysis whether they would be forced to sell government bonds under stress situation –to take spread basis risk into account.
- *Consideration on assumptions used to stress specific risks.* In a letter to the market as of April 2017, insurers were requested to include within the ordinary analysis on vulnerabilities that is part of the ORSA risks similar to those included in the EIOPA Stress Test (low for long/double hit), depending on the risk profile of undertakings. Companies were invited to integrate the ORSA report with a document that clarified the results of the analysis carried out regarding the potential impact of the EIOPA-like scenarios or explaining the underlying reasons why – in their view - the scenarios were not relevant or would not generate vulnerabilities.

More generally, considering that for the sake of ORSA's analysis assumption on the future development of the business and the market have to be made, the relative outputs allow for initial reflection on the (forward looking) insurers' expectations as regards the development of the market and the likely main management actions they consider to manage risks.

Furthermore interesting valuations emerge from the analysis at aggregated level of stress factors and the relative severity used by companies to evaluate the risks, as well.

In summary, the experience in Italy proves that the ORSA can indeed go beyond its original microprudential use and also address concerns that are more macroprudential in nature. Eventually it should be considered that the role ORSA has in mitigating/addressing risky situation at micro level can be translated into macro one, once the effects are aggregated at market level.

In order to make the ORSA operational from a macroprudential point of view, the following would be needed:

- A clarification of the role of the risk management function in order to include macroprudential concerns; and
- The inclusion of a new paragraph in Article 45 explicitly referring to the macroprudential dimension and the need to consider the macroeconomic situation and potential sources of systemic risk as follow-up of their assessment on whether the company

complies on a continuous basis with the Solvency II regulatory capital requirements.³⁵

- Clarification that a follow-up is expected after input from supervisors, namely from macroprudential authorities. On a risk-based approach this might imply the request of specific information in terms of nature, scope, format and point in time, where justified by likelihood or impact of materialisation of a certain source of systemic risk.

³⁵ A requirement to perform macroprudential analysis as part of the ORSA is currently not in line with the concept of the ORSA. The ability of macroprudential authorities to request certain analysis should also be included as part of the ORSA elements.

Furthermore, a higher level of harmonisation of the structure and content of the ORSA report would be needed, which would enable the identification of the relevant sections by the authorities in charge of macroprudential policies. This, however, would mean a change in the current approach followed with regard to ORSA.

- **Preliminary conclusion**

Although not primarily designed as an instrument to mitigate systemic risk, an enhanced ORSA requirement could contribute to a certain extent to address potential sources of systemic risks such as excessive concentrations. This option should therefore be further considered as macroprudential tool.

The ORSA process touches all aspects of an insurance company's processes and organisation on an ongoing basis. Hence, it has to be considered a repository of information which is key in detecting any potential (systemic) risk once aggregate at market level. It represents an opportunity to properly analyse new challenges and risks especially when warning indicators and benchmarking do not exist yet. Potential systemic risks such as those related to cyber crime and technology innovation in general, use of virtual currencies, or those linked to climate change which are very much debated at the moment should be part of the ORSA analysis.

4.3. Enhancement of the Prudent Person Principle

- **Description of the tool or measure**

The PPP is laid down in art. 132 of the Solvency II Directive. It prescribes that undertakings shall only invest in assets and instruments whose risks the undertaking concerned can properly identify, measure, monitor, manage, control and report, and appropriately take into account in the assessment of its overall solvency needs, i.e. the overall solvency needs taking into account the

specific risk profile, approved risk tolerance limits and the business strategy of the undertakings.

The PPP applies to all assets, in particular those covering the minimum capital requirement (MCR) and the SCR. Regarding the investment approach, art. 132 also provides some indications.

- There is a need to ensure the security, quality, liquidity and profitability of the portfolio as a whole.
- The localisation of those assets shall be such as to ensure their availability.
- Assets held to cover technical provisions shall also be invested in a manner appropriate to the nature and duration of the insurance and reinsurance liabilities.
- The assets should also be invested in the best interest of all policy holders and beneficiaries, taking into account any disclosed policy objective.
- Those investments and assets not admitted to trading on regulated financial markets shall be kept at prudent levels.
- Excessive reliance on any particular asset, issuer or group of undertaking as well as specific area, and excessive accumulation of risk in the portfolio shall be avoided.
- In particular, excessive risk concentration towards the same issuer or to issuers belonging to the same group shall be avoided.

The PPP should contribute to two main operational objectives. First, it should ensure that no excessive level of direct and indirect exposure concentrations occurs. The PPP has an influence on the asset side of the undertakings and therefore affect their investment behaviour. The absence of regulatory limits on investments does not mean that undertakings can take investment decisions without any regard to prudence and to the interests of policyholders (EIOPA, 2014b). In fact, one of the stated objectives of the PPP is to promote adequate diversification and avoid ex-

cessive concentration. From that point of view, the PPP is a replacement to specific quantitative thresholds that are used in other sectors.

Secondly, the PPP should also discourage excessive involvement in certain products and activities that are more risky and could also be more prone to systemic risk. For example, as considered by the IAIS (2016), 'investment and funding or other capital market activities that result in maturity or li-

quidity transformation, leverage or imperfect transfer of credit risk, such as repo and securities lending, should be considered potentially systemic non-insurance activities'. The merits of the PPP in discouraging exposures to the formerly known 'non-traditional and non-insurance' (NTNI) activities has also been acknowledged by the ESRB (2015), to the extent that it contributes to a reduction of risks and to the facilitation of an efficient portfolio management.

Exposure-based tools	Main source(s) of systemic risk	Operational objective(s)
Enhancement of PPP	<ul style="list-style-type: none"> Excessive concentrations Involvement in certain activities or products with greater potential to pose systemic risk 	<ul style="list-style-type: none"> Discourage excessive levels of direct and indirect exposure concentrations Discourage excessive involvement in certain products and activities

• Preliminary analysis

The fact that Solvency II is a principle-based framework has important benefits. By implementing the PPP instead of hard regulatory limits, insurers are not forced or induced to hold a certain share of specific assets, providing them with more flexibility to decide the investment strategy, taking into account their ALM approach. This should contribute to mitigating the risk of excessive concentrations both at institution – and, in an indirect way, at market level.³⁶

Given the nature of PPP, the lack of a prolonged experience and the fact that any potential macroprudential impact would arise indirectly essentially through moral suasion, it is difficult to assess the contribution of PPP to mitigating systemic risk. At this stage, therefore, the assessment should remain purely at conceptual level.

It should be stressed, however, that a lack of diversification (which the PPP seeks to avoid) may lead to several ex-

posures that could be potentially risky, which derived from:

- Issuers belonging to the same group;
- Geographical area or country;
- Industry sector;
- Asset class;
- Ratings of the assets in portfolio

The potential impact of the PPP work *ex-ante* and *ex-post* needs to be considered. *Ex-ante*, to the extent that it should be taken into consideration when deciding on the investment strategy of insurers. *Ex-post* if it is considered as a soft tool with corrective power. Supervisors are expected to assess these risks at company level.

In a similar way as described in the section on ORSA, the PPP could be enhanced to cope with macroprudential concerns. The macroprudential authority would seek to extract relevant information on the investment strategy of undertakings, analyse it together with other relevant information that might be available and provide input to supervisors on potential macroprudential risks.

³⁶ In addition to that, a tool of this nature has also advantages compared to hard triggers, to the extent that it may avoid potential herding behaviours when the insurers are close to reach or breach a certain threshold.

Indeed, by having an overview of the whole market, the relevant authority in charge of the macroprudential policy may also be able to identify certain trends and patterns that, on an aggregate level, may pose a risk that goes beyond individual institutions, potentially affecting the system as a whole. The same argument would also apply with risks related to the insurers' potential involvement in activities and products whose features may pose systemic risk. Undertakings would increase awareness on the need to consider the potential macroprudential impact when defining the use of these products. Authorities identifying such trends and patterns could seek to mitigate the potential source of systemic risk by seeking to influence through moral suasion in the investment behavior of undertakings.

Further experience of this tool, and on the investment behavior of insurers under the PPP, may be warranted before being able to assess if restrictions on investment or other abilities to constrain insurers' investment decisions are needed. In any case, the tool could be enhanced with the aim of making it more suitable for macroprudential purposes. For example:

- Specific requirements could be introduced to consider in the chosen investment strategies the macroprudential risks, such as credit cycle downturns, reduced market liquidity,

excessive concentrations at sector level.

- Specific requirements could be introduced to consider the investment strategies that could lead to procyclical behavior, including any relevant management actions the insurer has identified that it would rely on to manage their solvency position.

An additional enhancement of the PPP would be better defining some of the elements included in Article 132 of the Solvency II Directive. For example, it is indicated that 'use of derivative instruments shall be possible insofar as they contribute to a reduction of risks or facilitate efficient portfolio management'. It is not clear what is meant by 'efficient portfolio management', e.g. the speculative use of derivatives is not explicitly forbidden. In order to mitigate the risk derived from the involvement in certain activities or products with greater potential to pose systemic risk, more clarity should be provided.

• **Preliminary conclusions**

The PPP should contribute to discouraging excessive levels of direct and indirect exposure concentrations as well as excessive involvement in certain products and activities which are more likely to create systemic risk. An enhancement of the PPP to also consider macroprudential aspects would potentially be a significant step forward that deserves further consideration.

5. Pre-emptive planning

The background is a dark blue gradient. A white diagonal line runs from the top-left towards the bottom-right. In the upper-left, there is a faint, light-colored grid pattern. On the right side, there is a stylized representation of the American flag, with stars and stripes, though the colors are dark and blend into the background.

• Objective of pre-emptive planning

The overarching objective of the plans is to ensure a proper management of the risks of the company with the aim of minimising the risk of failure(s), as well as the potential impact in case the failure(s) finally materialises. The following plans will be considered: a) recovery plans; b) resolution plans; c) systemic risk management plans (SRMP); and d) liquidity risk management plans (LRMP).

The specific operational objective pursued depends, to a certain extent, on the type of plan. In general, recovery and resolution planning seek to ensure sufficient loss absorbing capacity and to avoid potential spillover effects stemming from distress in specific insurers, essentially due to a deterioration of the solvency position, leading to either:

- Failure of a G-SII or D-SII.
- Collective failures of non-systemically important institutions as a result of exposures to common shocks.

The requests of SRMP and LRMP, in turn, are more linked to the operational objectives of discouraging excessive involvement in certain products and activities, as well as discouraging excessive levels of direct and indirect exposure concentrations. From that perspective, the following sources of systemic risk would be targeted:

- Involvement in certain activities or products with greater potential to pose systemic risk.
- Potentially dangerous interconnections.

In summary, altogether, the four pre-emptive plans address very relevant sources of systemic risks identified, contributing to the stability of the financial system as a whole. As mentioned below, however, a proportionate approach in terms of defining the scope of undertaking subject to such plans is a fundamental element.

• Interaction with Solvency II

Initially, it may be argued pre-emptive planning is a tool essentially micro-prudential in nature. However, the aggregate effect of such planning in the system can have a positive macro-prudential impact. Indeed, a supplementary request for specific insurers to draft pre-emptive plans would contribute positively to preventing systemic risk.

Currently, there is generally no requirement for insurers to draft and maintain pre-emptive plans, with the exception of G-SIIs. Therefore, the interaction between macro and micro measures is at present non-existent. It should be stressed, that the origin of these plans lies in the work of the Financial Stability Board (FSB) and the IAIS, which should be carefully followed.³⁷

However, according to EIOPA, the requirement for insurers to develop and maintain recovery and resolution plans in a pre-emptive manner should be one of the building blocks of a harmonised recovery and resolution framework (EIOPA, 2017). The pre-emptive recovery plans would supplement the existing Solvency II recovery plans, which are only required after the insurer breaches the SCR.³⁸ From a crisis management perspective, it is however important to be prepared for adverse developments. With regards to resolution plans, Solvency II does not include a request for such plans. This measure would however be compatible and further supplement Solvency II.

Furthermore, in order to avoid creating potential for regulatory arbitrage or an unlevel playing field for insurers, consistency with the developments going on at global level should be warranted. Accordingly, the use of this tool should

³⁷ For example, the IAIS is currently revising the Insurance Core Principles, which will also address recovery and resolution related topics.

³⁸ Non-compliance with the SCR occurs where there is a breach of the SCR or where there is a risk of non-compliance in the following three months (please see Article 138 of the Solvency II Directive (2009/138/EC)).

not pre-empt or anticipate any current work at global level.

In the case of financial conglomerates, *a priori* no interferences are foreseen, given that the SRMP does not exist in

the banking regulation sphere. However, due to the potential complex structure of a financial conglomerate, it may be challenging to address all aspects of the SRMP of the consolidated financial conglomerate (see Box 9).

Box 9: Legal issues of requesting SRMPs to financial conglomerates

The possibility to request SRMPs to financial conglomerates raises several operational issues which require further work. In essence, this refers to: a) the supervisory challenges; and b) the scope of consolidation. This box does not seek to address all the issues, but sheds some light on some of these aspects.

a) Supervisory challenges

As regards supervision of financial conglomerates, the issue is complex at EU level, given the distinct supervisory framework for banks and insurers. Furthermore, there is in general separation of responsibilities at the supervisory level, which often implies a multiplicity of authorities, having in occasions little communication with each other.

This raises the issue of whether the measure should be applicable to all conglomerates, or only to a subset of conglomerates (e.g. insurer-led conglomerate). From a macroprudential perspective and, in particular, on regarding systemic risk analysis, it would be beneficial that the SRMP can be drafted by any type of conglomerate, be it insurer-led or banking-led. The *ad hoc* decision should be ideally taken by the respective NSA after consultation with the respective supervisors, or reaching agreement during one of the Crisis Management Group's meetings.

b) Scope of consolidation

The use of this measure, to be of any value for macroprudential purposes, would require that the plan is elaborated at consolidated level. This is the case for the G-SIIs that already elaborate SRMPs. However, as regards financial conglomerates there is the issue of the differences in respect of the scope of consolidation. Indeed, both Solvency II and the Capital Requirements Regulation (CRR)/CRD IV³⁹ differ from the Financial Conglomerates Directive (FICOD)⁴⁰ when considering the scope of consolidation (group vs. conglomerate).

Hence, to appropriately detail the degree of internal and external interconnectedness, as well as the systemic risks involved in the financial system, the SRMP should be drafted using the perimeter of consolidation deriving from the FICOD.

In essence, this means that an SRMP should be drafted top-down at the level of the mixed financial holding company (which sits at the top of the financial conglomerate and is the ultimate parent undertaking in the group). However, given that mixed financial holding companies are not always supervised, this means that the preparation and elaboration of the SRMP should be borne by the parent undertaking directly underneath the mixed financial holding company, which in essence will be an insurance or banking group.

³⁹ The Capital Requirements Directive IV (CRD IV) and the Capital Requirements Regulation (CRR).

⁴⁰ Directive 2002/87/EC (FICOD) on the supplementary supervision of credit institutions, insurance undertakings and investment firms in a financial conglomerate.

5.1. Request of recovery plans

• Description of the tool or measure

The measure, in line with the approach taken for G-SIIs as stated in the FSB's *Key Attributes of Effective Resolution Regimes for Financial Institutions*,

consists of specific insurers being requested to prepare pre-emptive recovery plans in order to decrease their likelihood of failure. This in turn should reduce the potential spillover effects stemming from situations of distress in insurers, whenever there is a high risk of collective failures.

Pre-emptive planning	Main source(s) of systemic risk	Operational objective(s)
Request of recovery plans	<ul style="list-style-type: none"> • Deterioration of the solvency position leading to: <ul style="list-style-type: none"> – Failure of a G-SII, D-SII – Collective failures of non-systemically important institutions as a result of exposures to common shocks 	<ul style="list-style-type: none"> ➤ Ensuring sufficient loss absorbency capacity and reserving

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A recovery plan can be defined as a special case of contingency planning.⁴¹ In a pre-emptive recovery plan, an insurer describes the possible measures it would adopt to restore its financial position following a significant deterioration caused by potential scenarios of stress. These pre-emptive recovery plans, which are drafted in normal times, supplement the Solvency II recovery plans in case of a breach of the SCR.⁴² It should be stressed that some countries have already incorporated the request of pre-emptive recovery plans already in the national frameworks.

Pre-emptive recovery plans could be seen as a natural extension of the ORSA and contingency planning. However, recovery planning goes beyond ORSA, given that it focuses on scenarios of crisis and on a range of recovery measures to be used in order to recover the financial position of the insurer. Accordingly, the aim is to contribute to the operational objective of ensuring sufficient loss absorbency capacity and reserving, by assessing *ex ante* the abovementioned scenarios of crisis, the results of which may signal potential deficiencies in terms of inadequate capitalisation of the insurer across the scenarios assessed in the recovery plan.

41 See Recovery Planning - Comparative Report on Governance Arrangements and Recovery Indicators, EBA (2016).

42 The main differences between pre-emptive recovery plans and Solvency II recovery plans are explained in EIOPA (2017).

Box 10: Recovery planning within the scope of EIOPA's Opinion on Recovery and Resolution

EIOPA's Opinion to institutions of the European Union on the harmonisation of recovery and resolution frameworks for (Re)Insurers across the Member States highlights the rationale for the harmonisation of national recovery and resolution frameworks for insurers. It establishes building blocks to contribute to adequately protecting policyholders, maintaining financial stability and protecting public funds by ensuring that all Member States have a common understanding and a similar approach in terms of objectives, and a common set of recovery and resolution measures. The Opinion states that the scope of a harmonised recovery and resolution framework should in principle cover all (re)insurers within the scope of Solvency II. However, proportionality should be a fundamental guiding principle of a harmonised framework.

Although Solvency II has reduced the likelihood of insurers failing in the future, it is not designed to completely eliminate this risk. Having in place a harmonised and effective framework would also be particularly relevant in fragile macroeconomic environments, like the current low interest rate environment which poses risk to insurers. This point is particularly interesting from a macroprudential point of view.

A key aspect of this measure is the concept of proportionality, as stated in EIOPA's Opinion (2017),⁴³ which applies to all pre-emptive plans considered in this paper. To avoid excessive burdens to insurers, the measure should in general be directed towards insurers which might have a direct or indirect impact on policyholders, pose systemic risks or result in the discontinuance of services which could harm the financial stability and/or real economy. The targets of this potential measure should be aligned with the work EIOPA is currently doing as a follow-up of its Opinion on Recovery and Resolution (see Box 10).

• Preliminary analysis

Preventive recovery planning can improve the insurer's ability to recover from stress, thereby reducing (to some degree) their risk of failure. Therefore, extending the request to other insurers beyond G-SIIs should theoretically contribute to reduce the risk of other undertakings failing, reducing in turn systemic risk to some degree, as the failure of a non-G-SII could still impact market confidence and exacerbate systemic risks.

As noted by the ESRB in its Report on Recovery and Resolution (ESRB, 2017),

⁴³ See Box 10.

a credible and consistent recovery and resolution framework could help mitigate system-wide risks, by identifying critical functions and contagion channels.

Furthermore, in the banking sector, following the implementation of the Bank Recovery and Resolution Directive (BRRD) in January 2015, the European Banking Authority noted that pre-emptive recovery planning has become pivotal in banks' risk management processes. Benefits such as improved governance, or the acceptance of a broad set of metrics (e.g. recovery triggers) to regularly monitor any signs of distress, are elements that contribute to financial stability and reducing or mitigating systemic risk as a whole.⁴⁴

In terms of potential costs and side effects, insurers may face costs in terms of potential fees to external consultants and/or time devoted by full-time equivalents (FTEs) when drafting the plans. Supervisors may also need additional resources to revise the plans in order to avoid weaknesses. Therefore proportionality is key to avoid placing

⁴⁴ Recovery Planning - Comparative Report on Governance Arrangements and Recovery Indicators, European Banking Authority (EBA) (2016).

a heavy burden, particularly to small insurers.⁴⁵

In summary, recovery plans may identify potential vulnerabilities (e.g. undercapitalisation, liquidity risk, or concentration risk) or risks for the system (e.g. contagion channels), and make the company and the supervisors more aware of them. In case of need, the company might be required to implement the recovery plan. Furthermore, depending on the risks and vulnerabilities identified, several tools such as moral suasion, enhancement of ORSA or, under certain circumstances, capital surcharge could be considered.

• Preliminary conclusion

From a macroprudential perspective, the measure deserves to be further considered as a (guided) discretionary tool to avoid potential spillover effects stemming from distress in specific insurers.

Proportionality is the key factor, both from a micro and macro perspective. In line with EIOPA's Opinion (2017), the requirement to develop and maintain pre-emptive recovery plans should in principle apply to insurers within the scope of the Solvency II framework, subject to the proportionality principle, i.e. a power for Member States and/or NSAs to waive the requirement for certain insurers based on a set of harmonised criteria and expert judgment/discretion. These criteria would need to be further developed in order to promote convergence in the EU, but could, for instance, be related to the nature of the insurer's business, its risk profile, its size, the scope and complexity of its activities and its interconnectedness to other institutions or the financial system in general.

In any case, the requirement for requesting recovery plans should not only be restricted to G-SIIs and D-SIIs. Smaller insurers should also be considered whenever there is a high risk of collective failures of non-systemically important institutions as a result of exposures to common shocks.

Costs are generally deemed not to be very high, neither for supervisors nor for medium or systemic insurers (both G-SIIs or D-SIIs), compared to the benefits accrued: improving the insurers' ability to recover from stress, reducing the risk of undertakings failing, or identifying relevant functions to be preserved and contagion channels. Furthermore, the insurers might identify beforehand obstacles and problems which might arise when implementing recovery measures. Thus, by detecting them, insurers can try to remove any potential obstacles or take preparatory measures in order to have a much viable range of recovery options available.

5.2. Request of resolution plans

• Description of the tool or measure

The measure consists on the development by competent authorities of resolution plans in a pre-emptive manner. Resolution plans act as roadmaps for protecting systemically important functions and facilitating resolution powers by authorities, with the intention of making the resolution feasible without severe systemic disruption and without exposing taxpayers to loss.⁴⁶ Hence, the focus is on operationalising the strategies to achieve an orderly process of resolution or liquidation, ensuring that the undertakings have sufficient loss absorbency capacity and avoiding reliance on public funds.

⁴⁵ The issue of proportionality is further discussed in EIOPA's Opinion on Recovery and Resolution.

⁴⁶ Definition taken from *Key Attributes of effective Resolution Regimes for Financial Institutions*, FSB (2014).

Pre-emptive planning	Main source(s) of systemic risk	Operational objective(s)
Request of resolution plans	<ul style="list-style-type: none"> • Deterioration of the solvency position leading to: <ul style="list-style-type: none"> - Failure of a G-SII, D-SII - Collective failures of non-systemically important institutions as a result of exposures to common shocks 	<ul style="list-style-type: none"> ➤ Ensuring sufficient loss absorbency capacity and reserving

As with recovery planning, a key aspect of this measure is the concept of proportionality. To avoid excessive burdens to competent authorities, the measure should in general be directed towards insurers which might have a direct or indirect impact on policyholders, pose systemic risks or result in the discontinuance of services which could harm the financial stability and/or real economy. As with recovery planning, the issue of scope and proportionality should be aligned with EIOPA's Opinion.

• Preliminary analysis

The ESRB notes in its report on recovery and resolution (ESRB, 2017), that while the contribution of the insurance sector to systemic risk has increased since the financial crisis, the ordinary insolvency procedures might however not be able to tackle a failure in the EU insurance sector in an orderly fashion. Thus, by ensuring that authorities are better prepared to deal with a resolution, this in turn might help minimise any systemic risks arising from an insurer's failure.

Furthermore, as stated by EIOPA in its recent Opinion (EIOPA, 2017), a harmonised and effective recovery and resolution framework would be particularly relevant in fragile market environments, like the current low interest rate environment which poses risks to insurers. A requirement for resolution authorities to develop and maintain resolution plans in a pre-emptive manner (i.e. during normal course of business) is recommended.

Contrary to recovery planning, the burden of resolution planning is borne in this case by the relevant authority.

However, there are benefits to resolution planning which in general seem to offset the costs. In normal times, pre-emptive resolution planning helps detect potential threats, identify any functions performed by the insurer which shall be maintained in resolution, as well as defining credible resolution actions and processes needed to implement these actions. Similarly, it helps supervisors to be more prepared and ready to respond to the crisis.

This additional information should be accompanied by additional (micro- or macroprudential) measures with the aim of mitigating the likelihood of disorderly resolutions. Given the nature of the plan (essentially strategic), authorities should focus on Pillar 2 measures (risk governance, supervisory review process or ORSA) to ensure smooth resolution processes, thereby mitigating systemic risk. At the same time, other measures aimed at strengthening own funds (e.g. use net profits or impose a capital surcharge) would ensure additional loss-absorbency capacity.

As material costs for the NSAs, it has to be noted that resolution plans are very resource intensive to produce and maintain, including the work required to extend the detailed operational planning at business unit level. Understanding and analysing resolution issues is a complex task requiring input from experienced supervisors, which may involve opportunity costs and have a knock-on impact on other supervisory work. Reviewing the resolution plan against FSB guidance is also cumbersome, and reduces the time available to develop other areas of the resolution plan.

In any case, regarding the abovementioned costs, economies of scale and scope should be achieved in the long-run, once resolution authorities acquire experience and proficiency in resolution planning.

- **Preliminary conclusion**

From a macroprudential perspective, the measure deserves to be further considered, since it ensures that authorities are as prepared as possible to deal with the resolution of a systemic insurer. A clear benefit from this would be the minimisation or reduction of any systemic risks arising from an insurer's failure, thus in turn protecting relevant functions and without resorting to taxpayers' money.

Indeed, pre-emptive resolution planning allows authorities to improve supervisors' readiness to deal with crises, enhance knowledge of resolvability issues, encourage early consideration of cross-border issues and make relevant processes more operational and orderly in a resolution scenario. Furthermore, it fosters international cooperation and information-sharing among supervisors.

Proportionality is a crucial element of this potential macroprudential tool, given that there might be significant costs involved in resolution planning. In line with EIOPA's Opinion (2017), the scope for pre-emptive resolution planning should in principle cover insurers subject to the Solvency II framework, but will include a lesser amount of insurers compared to recovery planning, with the possibility to waive the requirement for some insurers based on a set of harmonised criteria, expert judgement and the public interest. This means that the logical targets of this potential measure should be systemic insurers, such as G-SIIs and D-SIIs, and any significant insurers at a material risk of failure.

A notable downside to this measure is the absence of a range of effective

resolution powers in some Member States, which serve to execute the plan. Indeed, where supervisors have limited resolution powers, this can severely limit the value of the resolution plan. In these circumstances it is harder to produce and execute feasible and credible resolution strategies, hereby hampering the mitigation of systemic risk. In order to overcome this situation, EIOPA Opinion (2017) proposes to go for a minimum degree of harmonisation in the field of recovery and resolution for insurers would contribute to achieving policyholder protection, as well as maintaining financial stability in the EU. This includes broadening the existing resolution toolkit to introduce a common set of resolution powers with consistent design, implementation and enforcement features.

5.3. Request of Systemic Risk Management Plans

- **Description of the tool or measure**

The measure consists on NSAs requiring specific insurers, reinsurers and financial conglomerates to develop systemic risk management plans (SRMPs) for systemic risk reduction or mitigation purposes.

Contrary to banking, which has no equivalent regulatory report, the concept of the SRMP is unique to insurance. The IAIS, in its policy measures paper, describes the SRMP as a report in which the insurer presents all applicable measures that the G-SII intends to undertake to address the systemic risk that the institution may pose in the financial system. Therefore, the focus of the report is on the 'plan of action' by the insurer,⁴⁷ in terms of setting out the applicable measures to address systemically risky activities.

The aim of the insurer or conglomerate should be to mitigate or reduce systemic risk, and the SRMP is the tool to

⁴⁷ See Monkiewicz and Malecki's *Macroprudential Supervision in Insurance*.

explain how this would be done. Given that at present this plan is requested only to G-SIIs, the aim is to potentially go beyond the designated systemic entities by the Financial Stability Board, e.g. covering also specific large insurers (e.g. D-SIIs), that might pose systemic risk. Financial conglomerates should also be considered, even in the event that they are not insurer-led conglomerates.

The SRMP would be particularly interesting to assess the factors associated with the systemic relevant, as identified by the IAIS. It could help, for instance, to monitor, manage and/or mitigate activities with greater potential to pose systemic risk. Furthermore, it should also focus on potentially dangerous interconnections.

Pre-emptive planning	Main source(s) of systemic risk	Operational objective(s)
Request of SRMP	<ul style="list-style-type: none"> • Involvement in certain activities or products with greater potential to pose systemic risk • Potentially dangerous interconnections 	<ul style="list-style-type: none"> ➤ Discourage excessive involvement in certain products and activities ➤ Discourage excessive levels of direct and indirect exposure concentrations

• Preliminary analysis

For macroprudential purposes, an activity-based approach could be helpful in giving grounds for requesting SRMPs to specific insurers or financial conglomerates. The SRMP provides supervisors with relevant information relating to the systemic risk that the institution may pose in the financial system. By reviewing the extent of its systemic activities, the group wide supervisor should decide whether either some activities (as mentioned above) or factors (from the IAIS systemic risk drivers⁴⁸) deserve to be comprehensively analysed by the insurer in the report, as they are deemed in some way to pose systemic risk in the domestic or global level.⁴⁹

Theoretically, an SRMP could help mitigate or reduce systemic risk, whenever the following two conditions are fulfilled:

- Firstly, by means of ensuring that the institutions are monitoring and managing more effectively the activities, which could lead to posing systemic risk.

- Secondly, to make this actually effective in practice, insurers should seek to take concrete actions to better manage, reduce or separate their systemically risky activities.

Indeed, this second condition is fundamental to effectively reduce the level of systemic risk that the institution may pose in the financial system. This in turn would contribute to the operational objectives of discouraging risky behaviour, as well as discouraging excessive involvement in certain products and activities.

Based on the information gathered by supervisors, additional measures both at micro- and macroprudential level should be taken. The aim would be twofold: ensuring that insurers effectively reduce the potential sources of systemic risk (e.g. seeking to influence through Pillar 2 measures or limiting or restricting certain business lines or operations) or, at least, ensuring that they have additional loss absorbing capacity (e.g. requesting the use of net profits or requesting additional capital).

In terms of potential costs, insurers may face costs in terms of fees to externals and time devoted by staff involved in the drafting process. However, these costs are not deemed significant for

⁴⁸ See EIOPA (2018a).

⁴⁹ For more details on how to elaborate the SRMP, please refer to the IAIS document: *Guidance for Systemic Risk Management Plans* (2013).

large insurers nor financial conglomerates. As regards small insurers, they would be excluded from any potential request to draft SRMPs, unless there is a strong reason to include them.

- **Preliminary conclusion**

From a macroprudential perspective, the measure deserves to be further considered. The aim would be to ensure that specific insurers pursuing certain activities⁵⁰ and financial conglomerates address concerns on systemically risky activities, which increase the degree of interconnectedness and systemic risk, therefore setting out the appropriate steps to take in a so-called ‘plan of action’.

Out of all the preventive plans currently being drafted by G-SIIs, the SRMP is the most directly connected with addressing systemic risks, and therefore it can be of high macroprudential value.

In normal times, the SRMP allows the firm to monitor its systemic footprint and identify actions to mitigate it. It also ensures that proper information is circulated to the Board of Directors, increasing awareness on those matters. However, for the SRMP to be useful, the firms would need to take actions in order to successfully mitigate or reduce the systemic risk.

Provided that the list of G-SIIs designated by the Financial Stability Board already captures most of the firms which pose a material systemic risk, the measure should be applied only to the remaining significant insurers (which were left out of the G-SII list, but nonetheless appear to be systemic domestically), as well as to any other insurer or financial conglomerate, which according to an activity-based approach may generate or amplify systemic risk.

When potentially approaching the institution to produce the SRMP by reviewing its systemic activities, the group-wide supervisor should decide

which activities or factors⁵¹ deserve to be comprehensively analysed in the report, as they are deemed in some way to pose systemic risk in the domestic or global level. In any case, the potential request of this tool for macroprudential reasons should be in line with the work at global level (i.e. in the context of the IAIS).

The need to be consistent with the developments going on at global fora is paramount, so as not to create any potential for regulatory arbitrage or an unlevel playing field for insurers. In particular, it should not pre-empt or anticipate any ongoing work at global level.

Concerning the topic of financial conglomerates, the current global systemically important banks (G-SIB)/G-SII designation process does not satisfactorily address the issue of how conglomerate structures should be evaluated in the respective methodologies. Therefore, the request of elaboration of the SRMP to certain non-G-SIIs and conglomerates seems particularly appropriate to shed light on a range of systemic risk issues, such as interconnectedness of insurers within the financial sector, or the possibility of using the insurance part of a bank-led conglomerate to channel banking risks.

5.4. Request of Liquidity Risk Management Plans

- **Description of the tool or measure**

The potential measure consists on NSAs requiring specific insurers to develop Liquidity Risk Management Plans (LRMPs, also known as LMPs or Liquidity Management Plans) with the objective to assess the framework and arrangements that the insurer has in place to manage, mitigate or reduce liquidity risk for the whole group, thereby contributing to financial stability.

⁵⁰ As discussed above.

⁵¹ *Ibid.*

Pre-emptive planning	Main source(s) of systemic risk	Operational objective(s)
Request of LRMP	<ul style="list-style-type: none"> • Involvement in certain activities or products with greater potential to pose systemic risk • Potentially dangerous interconnections 	<ul style="list-style-type: none"> ➤ Discourage excessive involvement in certain products and activities ➤ Discourage excessive levels of direct and indirect exposure concentrations

The purpose of the LRMP is to strengthen the existing liquidity management framework. It seeks to monitor liquidity risks and avoid the mismanagement of liquidity (for instance, owing using illiquid assets to back short-term liabilities, or falling short of cash and funding sources).

The IAIS, in its Policy Measures paper, sets out further guidance on how to elaborate a LRMP. Besides the elements mentioned above, the LRMP should contain a liquidity gap analysis, describing both the liquidity sources and liquidity needs under normal and stressed conditions.

A key aspect of this potential measure is the concept of proportionality. Given that at present this plan is requested only to G-SIIs, the aim is to potentially go beyond the designated systemic entities by the Financial Stability Board, e.g. covering also specific large insurers (e.g. D-SIIs), that might pose systemic risk. Financial conglomerates are not considered for the purposes of requesting LRMPs, given that for significant supervised banks there is already a requirement for the production of consolidated liquidity reports (i.e. ILAAP or Internal Liquidity Adequacy Assessment Process).

• Preliminary analysis

LRMPs should focus primarily on activities with greater potential to pose systemic risk as well on the main channels of interconnectedness. Indeed, these are the factors which may pose greater systemic impact, as they are related to the degree of interconnectedness (e.g. liabilities with other financial institutions, derivatives). From that point of view, LRMPs would contribute to discouraging excessive involvement

in certain products and activities as well as excessive level of direct and indirect exposure concentrations.

The need to be consistent with the developments going on at global fora is paramount, so as not to create any potential for regulatory arbitrage or an unlevel playing field for insurers. In particular, it should not pre-empt or anticipate any ongoing work at global level.

Solvency II requires insurance or re-insurance undertakings applying the matching adjustment or the volatility adjustment to set up a liquidity plan projecting the incoming and outgoing cash flows in relation to the assets and liabilities subject to those adjustments. Synergies with the SRMP should be sought to the extent possible.

As a basis for construction of the LRMP, other plans that may exist and that touch upon liquidity issues could be used. For instance, beside data analysis, supervisors also collect and analyse the liquidity plans from the supervised companies. When considering liquidity issues, insurers generally discuss all strategies, policies and procedures that the insurer has in place to manage liquidity risk and implement its stated risk appetite.⁵²

In terms of mitigating systemic risk, the LRMP can increase awareness of po-

⁵² In its application of the its risk appetite, the insurer should have in place prudent limits on 1) maturity gaps; 2) concentrations of liquid assets and funding sources by currency, single counterparty, counterparty type, instrument type, and instrument seniority; 3) liquidity risk arising from insurance liabilities; 4) non-insurance liabilities maturing or redeemable within various time horizons; and 5) off-balance sheet or other exposures that could create liquidity needs during stressed market conditions.

tential liquidity risks and improve the G-SIIs' ability to recover from liquidity stresses, hereby reducing (to some degree) their risk of failure, as well as contributing to the operational objective of ensuring sufficient loss absorber capacity (from a liquidity point of view).

Once the potential risks and vulnerabilities have been identified, authorities could take measures to discourage excessive involvement in certain products and activities or potentially dangerous interconnections. For example, authorities could temporarily prohibit or restrict certain activities to those undertakings with particularly high exposures.

Similarly to pre-emptive recovery planning, extending the request to other insurers beyond G-SIIs would contribute to reduce the risk of those firms failing, reducing systemic risk to some degree as failure of a non-G-SII could still impact market confidence and exacerbate systemic risks.

• Preliminary conclusion

The LRMP represents an important supervisory tool to ensure a close monitoring of the liquidity situation. This tool deserves further consideration (in conjunction with the liquidity-based tools) as it provides valuable information on the liquidity framework, gives

insights into the liquidity cushions and gaps, and allows investigating potential shortcomings in situations of stress.

In any case, the potential request of this tool for macroprudential reasons should be in line with the work at global level (i.e. in the context of the IAIS) in order not to create any potential for regulatory arbitrage or lack of level playing field for insurers.

Given that liquidity risk is usually not a primary risk for the majority of insurers, any request of such plans should however be focused to a subset of large insurers, such as D-SIIs, or specific insurers heavily involved in non-traditional insurance, banking or other financial activities. In this situation, the LRMP could be a very useful supplement when it is coupled with the macroprudential request of recovery plans. Indeed, the added value of producing both a recovery plan and a LRMP could bring about synergies to large insurers in terms of risk governance and improving the framework for identifying, measuring, monitoring and mitigating solvency and liquidity risks, thereby reducing their probability of failure. For smaller insurers, the PPP could be enhanced with further requirements on liquidity monitoring similar to the requirements of a LRMP, but proportionate to the size and risk of the insurer.



6. Overview of tools, main conclusions and observations

Tool	Category	Scope	Origin and nature	Conclusions and observations
Leverage ratio	Capital and reserving-based tool	All (re)insurers	<ul style="list-style-type: none"> • Microprudential • Proactive 	<p>Monitoring at market level the capital to assets and the non-insurance liabilities to capital might indeed add value to identify potential risks.</p> <p><i>Main implementing challenge(s):</i></p> <ul style="list-style-type: none"> ➢ The specific definition of 'non-insurance liabilities'. ➢ The developments at global level.
Enhanced monitoring against market-wide under-reserving	Capital and reserving-based tool	All (re)insurers	<ul style="list-style-type: none"> • Micro- and macroprudential • Proactive 	<p>Gathering additional data on the actuarial assumptions of insurers and monitoring them with the actual developments to identify structural deviations is very relevant to avoid market-wide under-reserving.</p> <p><i>Main implementing challenge(s):</i></p> <ul style="list-style-type: none"> ➢ The identification by supervisors of the precise data to be requested to undertakings. ➢ Considerations on how to allocate the profits/losses by decomposing the annual result to its sources. This should be done in cooperation with the supervisors.
Additional reporting on liquidity risk	Liquidity-based tool	All (re)insurers	<ul style="list-style-type: none"> • Micro- and macroprudential • Proactive 	<p>The quantitative reporting does not contain sufficient information for the supervisor to be able to assess liquidity risk from a quantitative perspective, which makes it difficult to monitor liquidity risk at sector level for macroprudential purposes. Reporting should therefore be enhanced.</p> <p><i>Main challenge(s):</i></p> <ul style="list-style-type: none"> ➢ As a first step, the potential data gaps should be identified.
Liquidity risk ratios	Liquidity-based tool	All (re)insurers	<ul style="list-style-type: none"> • Microprudential • Proactive 	<p>A risk assessment framework based on prudential liquidity indicators could be developed that captures the level of liquidity risk at market level.</p> <p><i>Main implementing challenge(s):</i></p> <ul style="list-style-type: none"> ➢ A precise definition of high quality liquid assets ➢ The definition of thresholds that, once breached, would trigger supervisory action.
Enhancement of Prudent Person Principle	Exposure-based tool	All (re)insurers	<ul style="list-style-type: none"> • Microprudential • Proactive 	<p>Both microprudential tools could be enhanced, allowing authorities to make specific requests from a macroprudential perspective.</p> <p><i>Main implementing challenge(s):</i></p> <ul style="list-style-type: none"> ➢ Identification of elements to be requested in the context of ORSA and PPP, which essentially will depend on the type of macroprudential risk to be monitored.
Enhancement of ORSA	Exposure-based tool	All (re)insurers	<ul style="list-style-type: none"> • Microprudential • Proactive 	<ul style="list-style-type: none"> ➢ Ways to aggregate individual information obtained from ORSA and PPP to extract relevant macroprudential information.
Recovery plans	Pre-emptive planning	All (re)insurers	<ul style="list-style-type: none"> • Microprudential • Proactive 	<p>The pre-emptive plans address very relevant sources of systemic risks identified, contributing to the stability of the financial system as a whole.</p> <p><i>Main implementing challenge(s):</i></p> <ul style="list-style-type: none"> ➢ Need to consider the issue of scope and proportionality, i.e. which institutions would be subject to pre-emptive planning and which would be waived, taking into account that the scope might differ across plans.
Resolution plans	Pre-emptive planning	All (re)insurers	<ul style="list-style-type: none"> • Micro- and macroprudential • Proactive and reactive 	<ul style="list-style-type: none"> ➢ Need to consider some guidance on the structure and content of such plans to avoid fragmentation.
Liquidity Risk Management Plans	Pre-emptive planning	All (re)insurers	<ul style="list-style-type: none"> • Micro- and macroprudential • Proactive and reactive 	<ul style="list-style-type: none"> ➢ In both cases, due account on the developments in other areas (in particular, recovery and resolution and IAIS work) should be taken.
Systemic Risk Management Plan	Pre-emptive planning	All (re)insurers	<ul style="list-style-type: none"> • Macroprudential • Proactive 	

Enhanced reporting and monitoring tools

	Tool	Category	Scope	Origin and nature	Conclusions and observations
Intervention powers	Counter-cyclical capital buffer	Capital and reserving-based tool	All (re)insurers	<ul style="list-style-type: none"> • Macroprudential • Proactive and reactive 	<p>This tool should not be further considered. Given the way in which the insurance sector works, the risk of overlaps with work of current countercyclical features of Solvency II, the operational difficulties and, in general, the lack of a close link with the credit cycle, a broad-based countercyclical capital buffer is not an adequate tool.</p>
	Capital surcharge for systemic risk	Capital and reserving-based tool	Targeted	<ul style="list-style-type: none"> • Micro- and macroprudential • Proactive and reactive 	<p>A capital surcharge for systemic risk seems a suitable complement to the currently existing microprudential capital surcharge.</p> <p><i>Main implementing challenge(s):</i></p> <ul style="list-style-type: none"> ➢ Entity-based add-on: need for a methodology on how to identify systemically important insurers. ➢ Activity-based add-on: need to identify which activities could trigger the application of this add-on. ➢ Behaviour-based: how to determine the (collective) excessive risk-taking of insurance undertakings. <p>Two other relevant considerations should be made. First, there is a need to strike a balance between flexibility at national level and ensuring a level playing field; and secondly, the design of this tool should take into account the developments at global level.</p>
	Liquidity requirements	Liquidity-based tool	All (re)insurers	<ul style="list-style-type: none"> • Micro- and macroprudential • Proactive and reactive 	<p>This tool should not be further considered. There is no evidence yet of material liquidity risk at macro level that would justify the development and implementation of binding liquidity requirements for insurers.</p>
	Temporary freeze on redemption rights	Liquidity-based tool	Targeted	<ul style="list-style-type: none"> • Microprudential • Reactive 	<p>This tool is likely to avoid life insurers to be over-impacted by a run to insurance. It tool should be used in very exceptional circumstances, to prevent risks representing a strong threat for the financial health of the whole insurance market or for the financial system and for a limited period of time.</p> <p><i>Main implementing challenge(s):</i></p> <ul style="list-style-type: none"> ➢ The definition of specific scenarios (i.e. the concept of “emergency situation”) that would justify the activation of this measure. ➢ In some countries, there could be legal constraints for its application.
	Concentration thresholds	Exposure-based tool	All (re)insurers	<ul style="list-style-type: none"> • Macroprudential • Proactive 	<p>Emphasis should be put on enhancing risk management practices and, in general, accurate application of PPP, appropriate implementation of own risk assessment functions by the companies.</p> <p>On concentration thresholds, a sequential approach should be followed: 1) monitoring potential concentrations in a first instance; 2) considering potential soft thresholds for action only after a good overview of the potential risk is available; and 3) analysing the need for specific instruments at a later stage, if deemed necessary.</p> <p><i>Main implementing challenge(s):</i></p> <ul style="list-style-type: none"> ➢ Type of concentrations to be considered. ➢ When it comes to defining soft thresholds, a trade-off between having flexibility at national level while avoiding fragmentation at EU level should be struck. ➢ Need to consider whether some kind of guided discretion would be needed.

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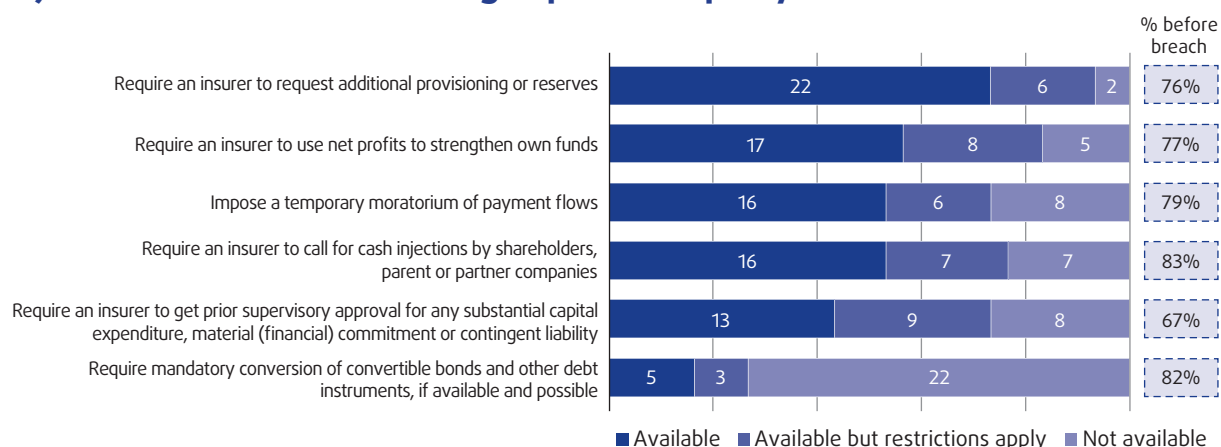


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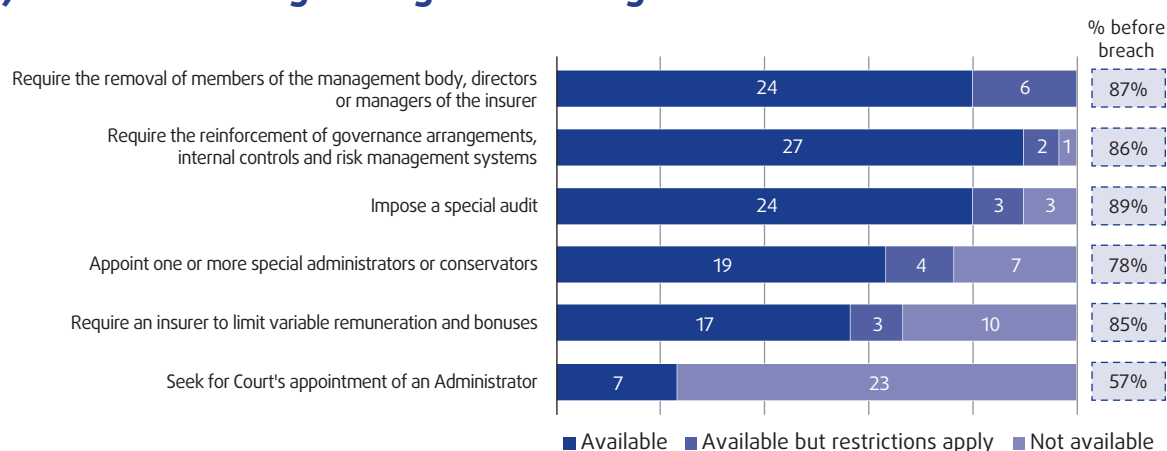


Annex: Powers available to NSAs

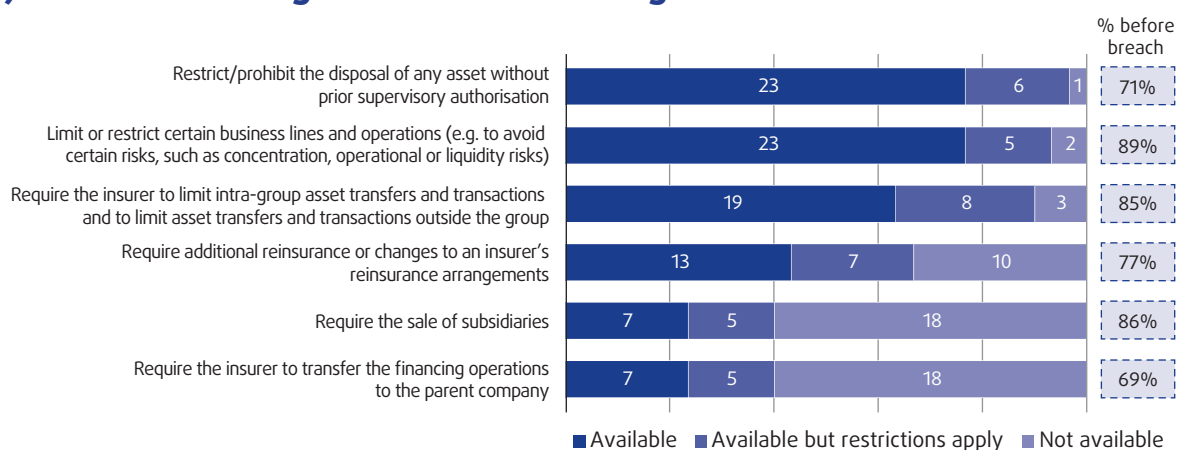
A) Powers aimed at restoring capital adequacy



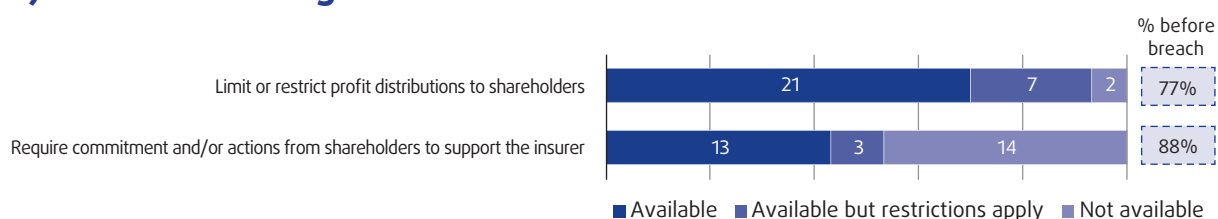
B) Powers affecting management and governance



C) Powers affecting the business and organisation



D) Powers affecting the shareholders



Source: EIOPA (2017).

Note: Survey carried out in 2017 (sample: 30 NSAs). NSAs were asked to identify the powers they have at their disposal to intervene at an early stage. The right-hand figure shows whether the power can also be exercised before the breach of the SCR.



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