2024 Insurance Stress Test

Report

EIOPA-BoS-24/553
17 December 2024

European Insurance and
Occupational Pensions Authority

CONTENTS

LIST OF TABLES AND FIGURES

LIST OF ABBREVIATIONS

CBS	Constrained Balance Sheet
CIU	Collective Investment Undertaking
EEA	European Economic Area
EOF	Eligible Own Funds
ESRB	European Systemic Risk Board
FBS	Fixed Balance Sheet
LTG	Long Term Guarantees
MA/RFF	Matching Adjustments portfolios/Ring Fenced Funds
NCA	National Competent Authority
OF	Own Funds
SCR	Solvency Capital Requirement
TP	Technical Provisions
UL/IL	Unit Linked and Index Linked business
VA	Volatility Adjustment

EXECUTIVE SUMMARY

The 2024 stress test exercise tested the resilience of the European insurance industry against the uncertainty deriving from the economic consequences of a re-intensification or prolongation of geopolitical tensions.

This sixth Union-wide exercise ran by EIOPA covers a representative sample of 48 participants from 20 countries covering around 75% of the European Economic Area market[1] (EEA) and it comprises of a capital as well as a liquidity component. The exercise has a non pass-fail nature and has a primary micro-prudential objective, in line with the previous stress test exercises. In addition, it contains macro-prudential elements which allow to infer potential spill-over effects from the insurance industry to other sectors.

The severe but plausible scenario[2], developed in cooperation with the European Systemic Risk Board (ESRB), elaborates over the intensification of geopolitical tensions and envisages a widespread resurgence of supply chain disruptions leading to lower growth and higher inflation. Second-round effects stemming from a wage-price spiral would further exacerbate inflationary pressures, ultimately leading to a re-appraisal of market expectations of interest rates across tenors and currencies. Despite expectations of decreasing inflationary pressures over time, growth will continue to be adversely affected. The resulting tightening of financing conditions would heterogeneously increase government bond rates and would weigh on corporate profitability, widen credit spreads and have a negative impact across other asset classes. The market shocks are complemented by a set of relevant insurance specific shocks given the context of the scenario.

The results show that the overall European insurance industry is well capitalised. This strong starting position provides enough capital to withstand the materialization of the tail events embodied in the extreme but plausible scenario of the stress test.

	Baseline	Fixed Balance Sheet		Constrained Balance Sheet	
	Value	Value	Δ (Baseline)	Value	Δ (Baseline)
Solvency Ratio	221.8%	123.3%	-98.5 p.p.	139.9%	-81.9 p.p.
Solvency Capital Requirement	309.3 bn	332.1 bn	7.4 %	321.4 bn	3.9 %
Eligible own funds	686.1 bn	409.6 bn	-40.3 %	449.6 bn	-34.5 %
Assets over Liability ratio	111.3%	107.3%	-4.0 p.p.	107.7%	-3.7 p.p.
Excess of Assets over Liabilities	656.0 bn	370.4 bn	-43.5 %	385.9 bn	-41.2 %

[1] Based on Solvency II total assets as of 2023 YE.

[2] The overall likelihood of the scenario for affected variables can be gauged by the probabilities of the shocks simulated for each response variable jointly with the historical (sample-dependent) probability of the trigger events. These joint probabilities vary across the different categories of financial assets, ranging between 0.03% and 0.5%. Details on the scenario can be retrieved from "Adverse scenario for the 2024 European Insurance and Occupational Pensions Authority's insurance sector stress test exercise", available here.

The aggregate solvency ratio drops by 98.5 p.p., from 221.8% reaching the level of 123.3% in the post stress, increased to 139.9% after the reactive management actions. The total drop of capital without the application of management actions exceeds EUR 270 bn. The number of participants that apply reactive management actions is 26, many of them applying more than one resulting in a total of 95 actions. Both eligible own funds (EOF) and solvency capital requirement (SCR) contributed to the reduction of the aggregate solvency ratio, with the former reduced by 40.3% and the latter increased by 7.4%. These effects are more severe against the 2021 stress test (38.2% and 7.1%, respectively), although the comparison is under the caveat of different scenario, scope and basis. Also, due to a methodological enhancement for the application of reactive management actions, namely, to consider the risk management frameworks of the participants and not only to the fulfilment of the regulatory solvency ratio, the number of participants applying them increased from 19 in 2021 to 26.

Besides this aggregate effect, for 8 participants the post stress capital requirement is not met in the fixed balance sheet (i.e. before reactive management actions). However, both for these and the rest of the participants the assets remain enough to cover the obligations to policyholders. All 8 participants with solvency ratio below 100% applied reactive management actions showing their ability to restore their positions above 100%. As noted above, more participants apply reactive managements actions, although the 100% solvency ratio is not breached to ensure that their internal risk management framework remains relevant. Overall, no substantial externalities emerged by the application of the reactive management actions, under the caveat that the embedded actions could not be controlled for this. Transitional measures contribute to maintain position above the regulatory requirements under post-stress scenario, with 7 more undertakings falling below regulatory requirements under fixed balance sheet assumption when such measures are removed.

The application of the shocks reduces the assets over liabilities ratio by 4.0 p.p. (3.7 p.p., when reactive management actions are allowed). However, the post-stress AoL remains above 100% for all the participants also when removing transitional measures.

Regarding the liquidity component, the results show the importance of the ample availability of liquid assets, needed to meet the increased liquidity needs of the scenario.

	Baseline	Fixed Balance Sheet		Constrained Balance Sheet	
	Value	Value	Δ (Baseline)	Value	Δ (Baseline)
Liquidity position (Net-flows + Cash and equivalent)	110.3 bn	-40.9 bn	-137.1%	61.1 bn	-44.6%
Sustainability (Net-flows + Cash and equivalent + Other liquid Assets with Haircut)	2,282.6 bn	1,561.4 bn	-721.1 bn	1,605.0 bn	-677.6 bn

The adverse scenario generated material liquidity needs, stemming mainly from the need to pay for surrenders. The aggregate liquidity position (net cashflows plus cash and equivalent) was not enough and resulted in a shortfall of EUR 40.9 bn. This led insurers to take reactive management actions, mainly redirecting investments and effectively becoming net seller of EUR 305.9 bn of

assets. As a result of all the actions taken (embedded and reactive), the liquidity position improved to a level of EUR 61.1 bn on aggregate. Regarding the contribution of margin call flows to the liquidity position, on aggregate they account for EUR -2.1 bn in the baseline, turning EUR -5.9 bn in the stressed scenario. Comparing the liquidity needs against liquid assets, for all the participants liquid assets were adequate to steadily sustain the liquidity needs caused by the stressed scenario. The importance of the liquid assets as a necessary liquidity source as well as the fact that the main liquidity needs are generated by the surrenders are shared insights comparing to the 2021 exercise.

Moving to the macroprudential aspect of the exercise, sales of assets was identified as one of the reactive management actions mostly used, applied by the participants both in the capital and in the liquidity component. The structure of the liquidity component allowed for a more comprehensive identification of such effects considering both the impact stemming from the "embedded" and "reactive" management actions. Specifically for the liquidity, the net sales amounted overall to EUR 305.6 bn, which accounts to approximately 4.0% of the average quarterly bond trading volumes at EEA level.

EIOPA will assess the need for issuing recommendations on relevant aspects where risks were identified. The outcome of the exercise will inform supervisory processes at European and National level. Insights gathered on the behaviour of the industry under stressed conditions should also inform the discussion on the capital relief at political level in the context of the Solvency II review.

1 INTRODUCTION

The 2024 stress test exercise is the sixth Union-wide exercise run by EIOPA.[3] The exercise is conducted by EIOPA in cooperation with the European Systemic Risk Board, as part of its mandate as stated in Art. 23 (1) EIOPA Regulation (EU) No. 1094/2010.

As with each of the previous exercises, the overall objective is to assess the resilience of the European insurance industry against adverse market developments. EIOPA tailors the goal, scope and scenarios of each exercise according to the current market conditions, risk outlook and their potential negative implications for insurers.

The 2024 stress test exercise does not have a pass-fail nature and aims at assessing the resilience of the European insurance industry from a capital and liquidity standpoint. While maintaining its micro-prudential dimension, the exercise builds on the experience from 2021 and also contains macro-prudential elements which allow to infer potential spill-over effects from the insurance industry to other sectors.

The objectives are complemented by the continuous strive for transparency that characterises EIOPA's actions since its foundation.[4] In this vein and within its capacity, EIOPA will keep its twofold approach in disclosing the results of the exercise, complementing this report, that is based on aggregated information, including the disclosure of a subset of balance sheet based indicators upon consent of the participants.

1.1 RISK OUTLOOK

High uncertainty regarding (geo)political and economic outlook. The last year has been characterised by inflation moving lower, meaningfully enough so that the central banks have already initiated the policy rate cutting cycle. However, inflationary risks remain relevant. For example, further geopolitical tensions or trade disruptions can increase prices, while negatively affecting growth.

The positive performance in financial markets can abruptly adjust in case risks materialise. The short-lived market correction in early August 2024 served as a reminder of how volatile market can become quickly. With overall positive performance in financial markets during this year and

[3] EIOPA ran Insurance stress test exercises in 2011, 2014, 2016, 2018, and 2021.
[4] Over time, also upon the European Court of Auditors' audit recommendations, EIOPA enhanced the transparency of the exercise including it in the objectives (refer to 2018 edition of the exercise).

relatively strong credit markets, the materialisation of tail risks can result in substantial repricing of risk. The potential inflationary pressures and lagged effects from the currently (but unwinding) restrictive monetary environment could only reinforce such dynamics.

The narrative of the stress test exercise remains relevant within the general economic context. The adverse scenario is based on the uncertainty deriving from the economic consequences of a re-intensification or prolongation of geopolitical tensions (ref. to 1.2.2 for more details). This retains the plausibility of the stress test exercise in the current and foreseeable risk landscape.

1.2 METHODOLOGY

EIOPA stress test exercises rely on the Solvency II framework as common ground for the assessment of the resilience of the insurance industry against adverse developments. Solvency II offers a common framework for the evaluation and reporting of balance sheet and solvency positions, SCR and own funds (OF), which ensure the comparability of the baseline positions and serve as guidance for recalculating the post-stress capital positions.

The reference date is 31 December 2023. The baseline case is, therefore, the financial situation of the participant at the reference date. The post-stress valuations are applied as of the reference date according to the technical specifications.[5]

1.2.1 STRUCTURE

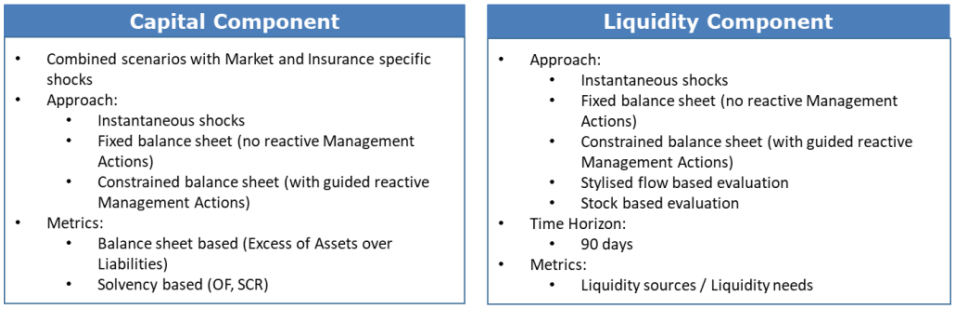
The structure of the 2024 stress test aims at assessing the position of the participants by two perspectives:

- Capital (Own Funds, Solvency Capital Requirement), where the Solvency II framework should be used as the basis for recalculating the post-stress capital positions ensuring the comparability of the baseline positions.
- Liquidity, based on the hybrid stocks / flows assessment of the liquidity sources and liquidity needs, also based on the experience gained in the context of the EIOPA liquidity monitoring exercises.

The two components are based as much as possible to a common narrative, a common scenario, and a common set of shocks. Due to the different nature of the two components, the application of the shocks, data collection, assessment and disclosure differ. The structure of the two components is described below (Figure 1).

[5] Please refer here.

Figure 1: Structure of the exercise



The post-stress capital and liquidity positions should be calculated under two different assumptions: i) fixed balance sheet (FBS); and ii) constrained balance sheet (CBS).

For the fixed balance sheet, the post stress positions should be calculated considering only the embedded management actions[6], whereas in ii) this can be relaxed (within specific boundaries), allowing for the application of plausible and realistic reactive management actions. It should be noted that, while in the liquidity component the pre and post stress positions do not elaborate explicitly on the balance sheet of the entities, the notation fixed balance sheet and constrained balance sheet are kept for consistency when referring to the post stress position without and with reactive management actions.

1.2.2 NARRATIVE AND SCENARIO

The adverse scenario is based on the uncertainty deriving from the economic consequences of a re-intensification or prolongation of geopolitical tensions. Such an environment would fuel supply chain disruptions and lead to lower growth and higher inflation. Second-round effects stemming from a wage-price spiral would further exacerbate inflationary pressures, ultimately leading to a re-appraisal of market expectations of interest rates across tenors and currencies. Concerns about the persistent effects of severe adverse shocks are reflected in a larger increase of expected market rates at the short end of the yield curve than at the long end. This contributes to a further inversion of the yield curve. Despite expectations of decreasing inflationary pressures over time, growth will continue to be adversely affected.

The resulting tightening of financing conditions, combined with higher wages and sluggish economic growth, would weigh on corporates' profitability. Corporate revenues expectations would reflect these degraded prospects, driving credit risk premia upwards and resulting in a widening of credit spreads.

[6] For a thorough treatment of the classification and use of the management action please refer to section 2.3.3 of the Methodological principle for insurance stress testing (EIOPA-BoS_19/568).

The high level of government bond yields, also driven by sustained high risk-free rates, would impose tight financing conditions for public spending. The pandemic-induced elevated level of government debt and the need for mitigating measures to support the real economy in a downturn would fuel concerns about sovereign debt sustainability, leading to a further heterogenous increase in government bond rates.

Households would also experience losses in real income and face higher borrowing costs amid higher unemployment. This would make it challenging for homeowners to service their mortgages, resulting in an increase in mortgage defaults. The ensuing fall in residential real estate prices is exacerbated by a slowdown in residential property market activity. At the same time, the large increase in interest rates would fuel a disorderly repricing in the commercial real estate market, in the context of structural changes to demand for office space that had been initiated by the COVID-19 pandemic.

The higher cost of debt-servicing, coupled with the sharp fall in property prices, would trigger a sudden repricing of covered bonds and other asset-backed securities, driving spreads upwards.

Such market reactions would also trigger a sudden revaluation of other financial assets in an uncertain environment characterised by high volatility. In particular, equity valuations would drop substantially worldwide, while hedge funds, real estate investment trusts and private equity funds would incur in losses. The latter would be largely affected by an amplification of liquidity stress. Finally, commodity prices would surge in line with the supply-chain driven inflation prospect.

The prescribed market shocks are economically and market consistent by construction. Their calibration was conducted in cooperation with the ECB / ESRB to generate a severe but plausible scenario.[7]

EIOPA complemented the market shocks with a set of insurance specific shocks to be applied to the business lines that are most affected by the proposed scenario. Figure 2 provides a summary of the shocks, the targeted business lines, and their application in the two components of the exercise. More detailed discussion of the shocks and their application is provided in the Technical Specifications (TS).[8]

[7] For a comprehensive description of the scenario and its likelihood please refer to: "Adverse scenario for the 2024 European Insurance and Occupational Pensions Authority's insurance sector stress test exercise", available here.
[8] For more details, please refer here.

Figure 2: Insurance specific shocks and their application

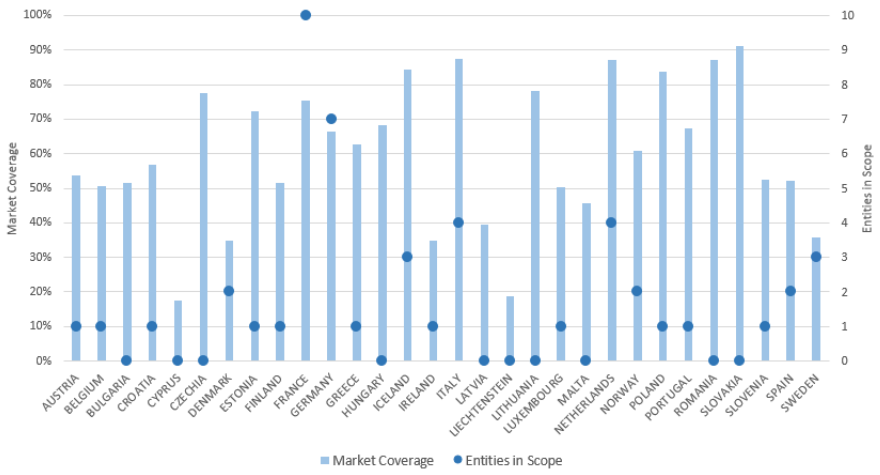
Shock	Life	Non-life
Mass lapse	$X_{C,L}$	
Cost of claims	$X_{C,L(health\ SLT)}$	$X_{C,L}$
Expenses	$X_{C,L}$	$X_{C,L}$
Reinsurance recoverables/receivables	X_{L}	X_{L}
Reduction in written premia	X_{L}	X_{L}

C=capital component; L=liquidity component

1.2.3 SCOPE

The 2024 stress test exercise targets European insurance entities based on the following principles: the market coverage at EEA level and the inclusion of as many EEA jurisdictions as possible.[9] The principles are converted into size-based criteria complemented by the identification of relevant solos at national level. Coverage of different business lines and local market coverage were considered in a second stage. Figure 3 presents the market coverage and the number of entities in scope at national level.

Figure 3: Local market coverage and number of entities in scope (capital component)



The criteria defined by EIOPA led to the identification, done in cooperation with National Competent Authorities (NCAs), of 48 undertakings: 44 groups and 4 solo entities, registered in 20 European jurisdictions[10] and operating globally (Figure 4). The selected sample covers 75% of the EEA market based on total assets in the Solvency II.

[9] Concrete criteria: 1) large groups; 2) for the purposes of enhancing the scope at national level, additional entities (groups and/or solos) not covered in step 1) are included.

[10] As an indication the jurisdictions captured in the exercise increases to 22 based on the scope of the liquidity component. See later in the text of the section for more details on liquidity scope.

Figure 4: List of participants

Count	Name	Country
1	VIENNA INSURANCE GROUP AG Wiener Versicherung Gruppe	AT
2	Ageas SA/NV	BE
3	Allianz SE	DE
4	Münchener Rückversicherungs-Gesellschaft AG	DE
5	HDI Group	DE
6	R+V Versicherung AG	DE
7	Debeka Lebensversicherungsverein a. G.	DE
8	Versicherungskammer Bayern Versicherungsanstalt des öffentlichen Rechts	DE
9	Viridium Group GmbH & Co KG	DE
10	Danica Pension, Livsforsikringsaktieselskab	DK
11	PFA_HOLDING_AS	DK
12	Swedbank Life Insurance SE	EE
13	Ethniki Holdings S.à r.l.	EL
14	VIDA-CAIXA, SOCIEDAD ANÓNIMA DE SEGUROS Y REASEGUROS	ES
15	MAPFRE, S. A.	ES
16	OP Ryhmä	FI
17	AXA SA	FR
18	CNP ASSURANCES	FR
19	CAA	FR
20	BNP Paribas Cardif	FR
21	SOGECAP GROUP	FR
22	GROUPE DES ASSURANCES DU CREDIT MUTUEL	FR
23	Covéa	FR
24	BPCE Assurances	FR
25	Groupama Assurances Mutuelles	FR
26	SGAM AG2R LA MONDIALE	FR
27	CROATIA osiguranje d.d.	HR
28	Irish Life Group Limited	IE
29	Sjóvá-Almennar tryggingar hf.	IS
30	VIS Vátryggingafélag Íslands hf.	IS
31	TM tryggingar hf.	IS
32	Assicurazioni Generali S.p.A.	IT
33	Gruppo Intesa Sanpaolo Vita	IT
34	Poste Vita Group	IT
35	UNIPOL GRUPPO SPA	IT
36	Lombard International Assurance Holdings S.à r.l.	LU
37	NN Group N.V.	NL
38	Achmea B.V.	NL
39	ASR Nederland N.V.	NL
40	Athora Netherlands NV	NL
41	Kommunal Landspensjonskasse	NO
42	Storebrand ASA	NO
43	Powszechny Zaklad Ubezpieczen	PL
44	LongRun Portugal, SGPS	PT
45	Skandia Försäkringsgrupp	SE
46	Nordea Life Holding AB Group	SE
47	If Skadeförsäkring AB (publ)	SE
48	Skupina Triglav	SI

The liquidity component targets the same insurance entities as the capital component, however the focus of the analysis is on the solo level. For all the participants, the assessment was conducted at solo level and limited to those entities in the perimeter that are more relevant by a liquidity risk perspective. The identification of the solo entities followed the following criteria: a) entities shall be insurance or reinsurance solo undertakings, b) undertakings that are outside the scope of European insurance supervision (non-insurance entities and solos outside EEA), shall be excluded, c) the selected solos cover a relevant part of the total assets of insurance EEA solos belonging to the participant. Quantitative criteria were complemented by qualitative consideration on the exposures

of the entities to liquidity risk. These criteria led to the identification of 132 insurance undertakings, out of which 57 life insurance undertakings, 34 non-life insurance undertakings, 10 reinsurance undertakings and 31 composite entities.

The selection of relevant solos was a joint Participant / NCAs / Stress Test Project Group effort.

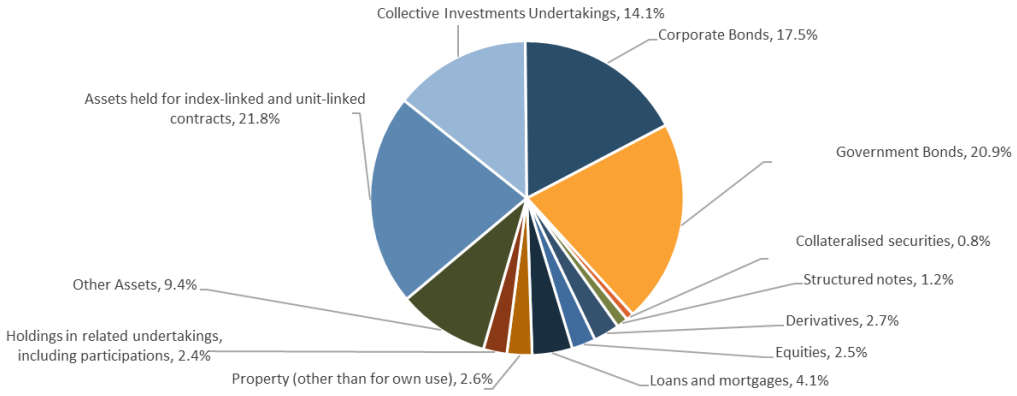
1.2.4 DATA QUALITY ASSURANCE

The quality assurance process breaks down in 3 main building blocks: a) the pre-validation, b) the local validation and c) the central validation. The three steps are sequential and are distinctly contributing to the data quality assurance. The pre-validation phase was the starting point of the whole process, aiming at enhancing the level playing field of the simplifications, assumptions and approximations used across the participants and was an input to the next two phases. The local validation, assessed the follow-up actions raised during pre-validation discussions, executed (common) data checks and analysis expected by the central validation and allowed the supervisors to leverage on their knowledge and specify additional checks on the data and approaches applied by their participants. Finally, the central validation was built upon a certain level of data quality following the first two phases and focused more on the cross-sectional perspective, trying to identify additional data quality considerations.

2 CHARACTERISTICS OF THE SAMPLE

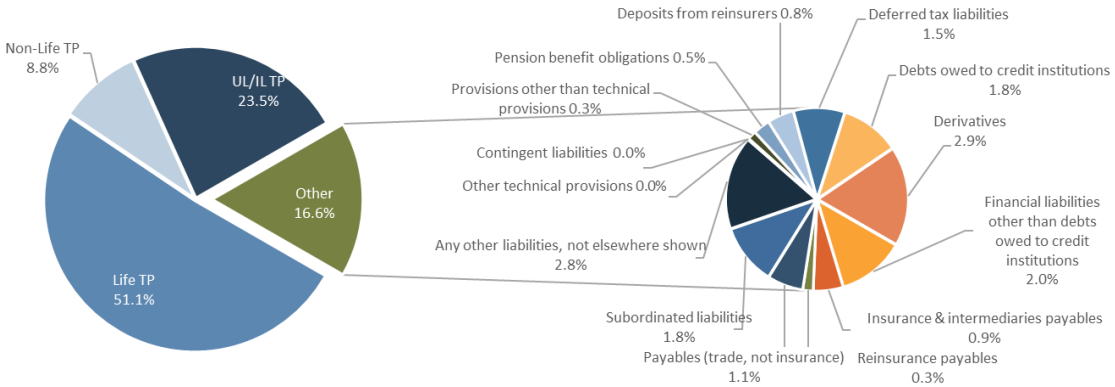
The total assets of the 48 participants at year-end 2023 amount to approximately EUR 6.4 tn. As shown in Figure 5, bonds are the largest asset category (38.4%) with 20.9% of total assets in government bonds and 17.5% in corporate bonds, followed by assets held for Unit-Linked and Index-Linked business (UL/IL) and Collective Investment Undertakings (CIUs).

Figure 5: Aggregate asset composition of the stress test participants in the baseline



On the other side of the balance sheet, total liabilities amount to approximately EUR 5.8 tn. They are dominated by Life TP (51.1%) with the residual TP split into UL/IL (23.5%) and non-life (8.8%). Other liabilities (16.6%) comprise of various other items, indicatively, derivatives (2.9%), deferred tax liabilities (1.5%) and subordinated liabilities (1.8%) (Figure 6).

Figure 6: Aggregate liability composition of the stress test participants in the baseline



The sample is dominated by standard formula users, with an almost 69% of the participants using it (Figure 7). However, standard formula users cover only 50.6% of the total assets of the sample, and the representation of the non-standard formula users increases to 49.4% in terms of total assets. In addition, as shown in Figure 8, the vast majority of the sample is using the volatility adjustment (VA), and less than half the transitional measures on technical provisions.

Figure 7: Participants split by method of calculation of the Solvency Capital Requirement

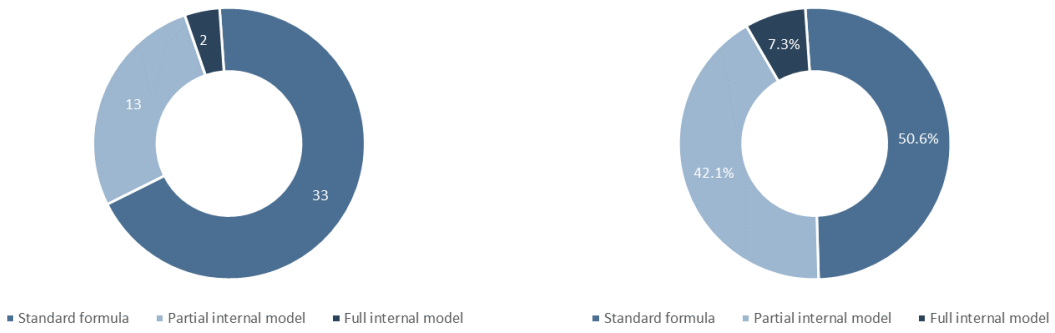
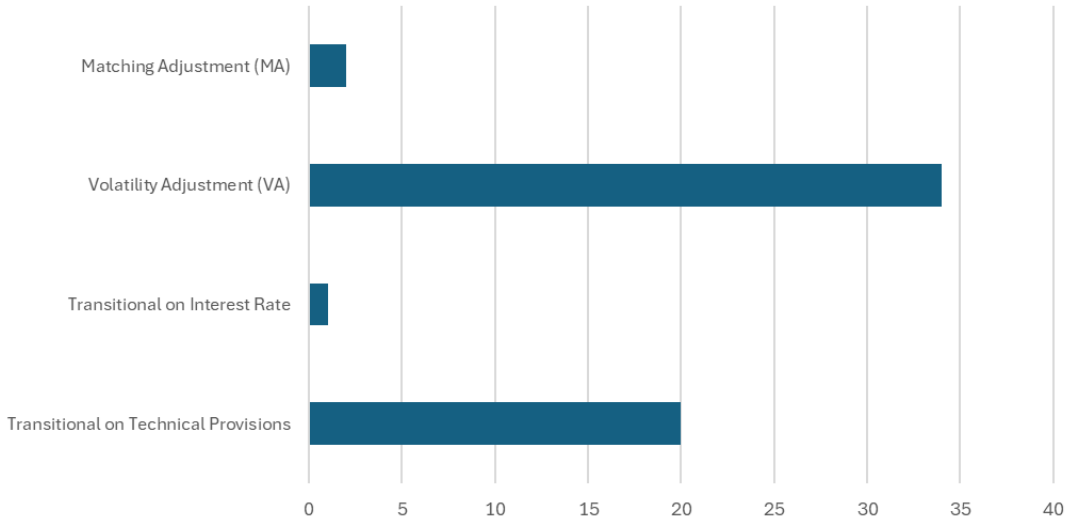


Figure 8: Application of Long Term Guarantee and Transitional measures



3 MAIN FINDINGS

This section discusses the impact of the scenario in the two components namely, capital (section 3.1) and liquidity (section 3.2). The section builds on a cascade approach, discussing first higher-level indicators (e.g., solvency ratio) and continuing to lower-level ones (e.g., assets and liabilities).[11] The indicators are reported for baseline, fixed balance sheet and constrained balance sheet. Regarding the latter, the whole sample is included and the results for the entities not applying RMAs are the same in the stressed scenario with and without RMA. Only in section 3.3 the sample is restricted to those entities that have applied reactive management actions, providing more details.

3.1 CAPITAL COMPONENT

The current section discusses the aggregate impact of the stress test scenario, with the subsections reporting the main messages for the distribution of the participants.

Figure 9: Impact of the adverse scenario on the main Solvency II indicators

	Baseline	Fixed Balance Sheet		Constrained Balance Sheet	
	Value	Value	Δ (Baseline)	Value	Δ (Baseline)
Solvency Ratio	221.8%	123.3%	-98.5 p.p.	139.9%	-81.9 p.p.
Solvency Capital Requirement	309.3 bn	332.1 bn	7.4 %	321.4 bn	3.9 %
Eligible own funds	686.1 bn	409.6 bn	-40.3 %	449.6 bn	-34.5 %
Assets over Liability ratio	111.3%	107.3%	-4.0 p.p.	107.7%	-3.7 p.p.
Excess of Assets over Liabilities	656.0 bn	370.4 bn	-43.5 %	385.9 bn	-41.2 %

The aggregate solvency ratio drops by 98.5 p.p., from 221.8% reaching the level of 123.3% in the post stress, increased to 139.9% after the reactive management actions (Figure 9). The drop of capital without the application of management actions exceeds EUR 270 bn. The number of participants that apply a reactive management action is 26, many of them applying more than one resulting in a total of 95 actions. Both EOF and SCR contribute negatively on the aggregate impact on the solvency ratio, with the former reduced by 40.3% and the latter increased by 7.4%. Under the caveat of a different scenario, scope and basis, these compare with a reduction of 38.2% for EOF and an increase of 7.1% in SCR as reported in the 2021 stress test exercise.[12]

The aggregate reduction in the EOF by 40.3% (EUR 276.5 bn) is mostly explained by the movement in the excess of assets over liabilities. The residual effect stems from the variation in the available own funds' items, the tiering effect and the consolidation of other entities.

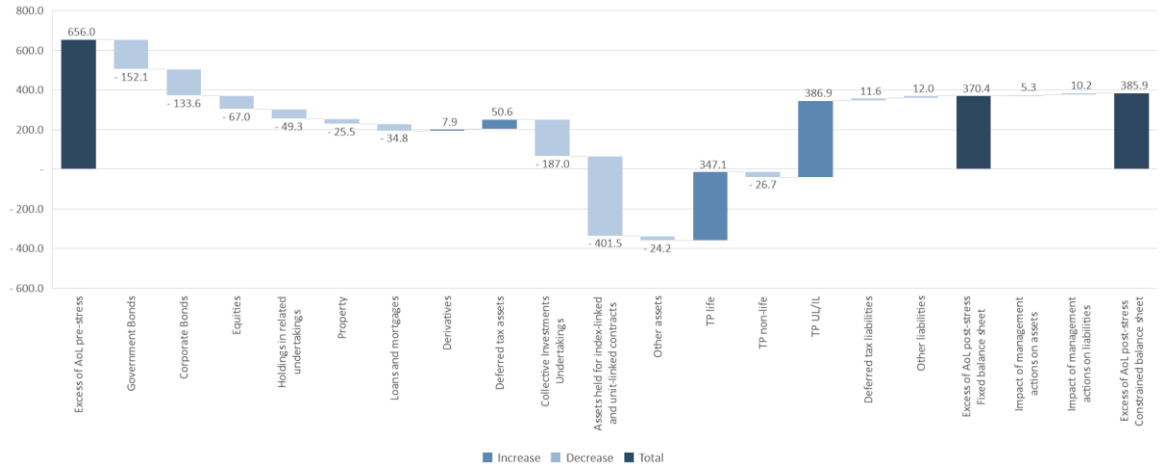
[11] Either aggregate or distributional analysis is followed. Taking as example the solvency ratio, to build the aggregate solvency ratio it involves summing up the eligible own funds for all participants (numerator) and divide it with the sum of all capital requirements of all participants (denominator).

[12] For more details, please refer to the 2021 Insurance Stress Test Report, available here.

The stress test shocks (e.g., higher spreads, interest rates, inflation) result in a reduction in the value of liabilities, but the reduction in assets is more pronounced. Their net effect results in a loss of EUR 285.6 bn, or almost -4.4% in terms of (baseline) total assets. The management actions taken recover around EUR 15.5 bn of the loss, which translates to a benefit of 2.3 p.p. for the excess of assets over liabilities and increases to almost EUR 40.0 bn of additional eligible own funds or a benefit of 5.8 p.p. for eligible own funds in relative terms. In terms of the assets over liabilities ratio, the starting position of 111.3% reduces to 107.3%, with marginal recovery to 107.7% after the reactive management actions.

The main effects on non-UL/IL assets (Figure 10) comes from the collective investment undertakings (CIUs), followed by bonds with the reduction of life technical provisions providing the largest mitigation effect. The asset side shock is a combination of shocks' severity but also of the share of holdings of such assets in the aggregate portfolio. The large benefit on liabilities is driven by the discounting effect, and the reduction in future discretionary benefits and of the materiality of life business. The net effect of UL/IL is negative EUR -14.6 bn, with non-life TP biting even more EUR -26.7 bn (reflecting the inflation shock). The marginal impact of insurance specific shocks pushed total liabilities higher on aggregate, comparing to around 10% in terms of the final variation.

Figure 10: Decomposition of the change in excess of assets over liabilities. Data in EUR bn.



The increase in the aggregate post stress capital requirement (SCR) of 7.4% (shown in Figure 9) reflects the balance between lower gross SCR (due to markets shocks), but less benefit from the loss absorbing capacity of technical provisions (same reason) and deferred taxes (e.g., due to less future profits). The last two effects dominate on aggregate, therefore resulting in an increase in the capital requirement post stress. In relation to the absorbing capacity of technical provisions, the trade off at play is that the market shocks resulted in lower future discretionary benefits, hence lowering the technical provisions. Following this benefit ultimately at eligible own funds level, the post stress loss absorbing capacity is reduced (almost halves). Similar, but not identical, movements

apply for the loss absorbing capacity of deferred taxes (down almost by one third). Finally, the reactive management actions resulted in the milder increase of 3.9% in the post stress capital requirement.

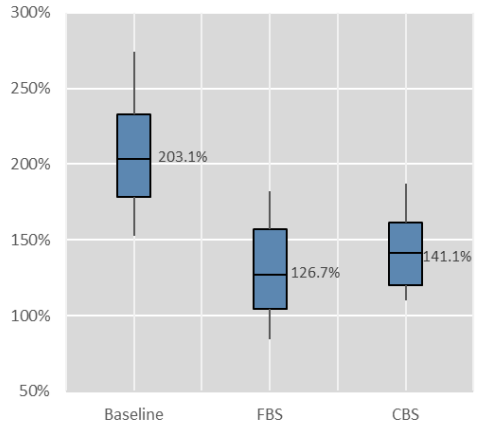
Excluding the transitional measures, the aggregate solvency ratio drops from 209.3% in the baseline to 108.7% in the fixed balance sheet. This implies a drop of 100.7 p.p., which is 2.2 p.p. more severe than the one implied assuming the measures (Figure 9). After the reactive management actions, the starting ratio of 209.3% drops to 124.4%, implying a reduction of 84.9 p.p., which is almost 3.0 p.p. more severe than the one implied assuming the measures (Figure 9).

As expected by their nature and their role within the Solvency II framework, additionally removing the long term guarantees (LTG) measures results in significantly higher impact. It would have brought the baseline aggregate solvency ratio to 189.4%, the fixed balance sheet to 75.3% only recovering to 88.6% after reactive management actions. This significantly higher severity is also attributable to the high post stress volatility adjustment, reflecting and compensating the materiality of the spread shocks.

3.1.1 SOLVENCY RATIO

The distribution of the solvency ratio for baseline, fixed balance sheet and constrained balance sheet reflects the widespread and material effect of the shocks, with the distribution only partially recovering after the reactive management actions. Figure 11 shows that, although the median in the baseline is lower than the aggregate (203%.1 against 221.8%, respectively), yet the post stress median is above the post stress aggregate (126.7% against 123.3%, respectively). In fact, further looking at the relative reduction in these solvency ratios (more comprehensive measure for the materiality), the scenario has lower materiality for the median than the aggregate (-37.6% and -44.4%, respectively). This shows the heterogeneous effects of the shocks in relation to the size of the participants. Looking at the dispersion of the distributions in Figure 11, the interquartile range (difference between 75th and 25th percentiles) shrinks by 1.9 p.p. in the fixed balance sheet, effect driven from more pronounced reduction of the 75th percentile. After reactive management actions, however, the dispersion reduces more significantly, namely by 12.5 p.p., effect driven by the more pronounced upward effect in the 25th percentile (lower capitalised part of the distribution).

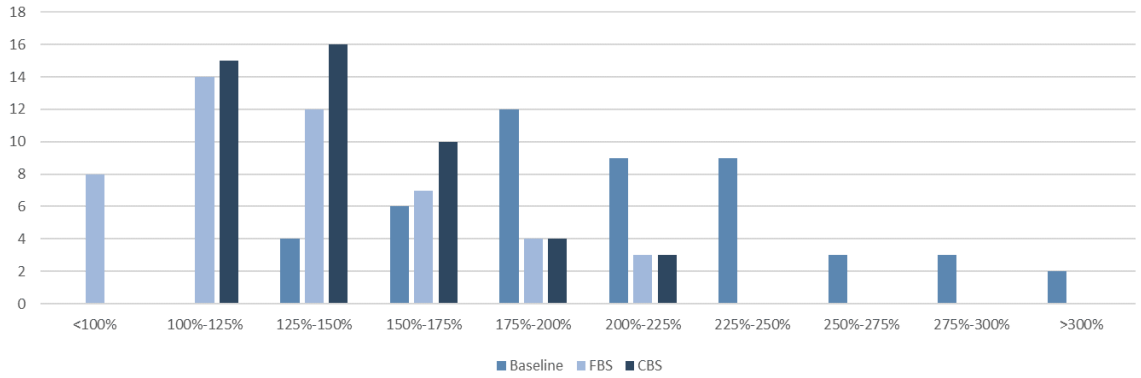
Figure 11: Distribution of the Solvency ratio in Baseline, FBS and the CBS



Note: boxplots report 10th, 25th, 50th, 75th and 90th percentile of the distribution

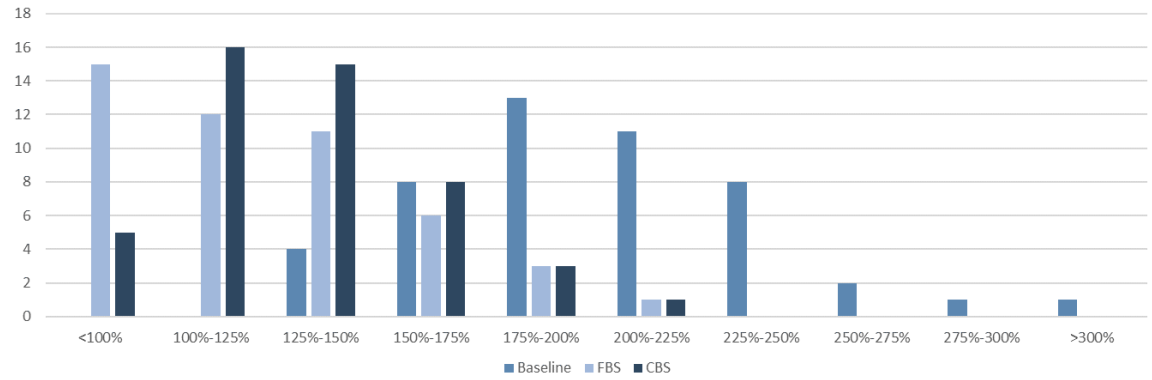
Figure 12 shows that 8 participants are below the 100% threshold in the fixed balance sheet, but no one after the application of reactive management actions. Indeed, appropriate reactive management actions have been applied recovering the solvency ratio above threshold. However, not only these 8 participants utilised reactive actions, with additional 18 using them e.g., to comply with internal set thresholds higher than the 100%. Overall, reactive management actions also change the count of buckets 100%-125%, 125%-150% and 150%-175%.

Figure 12: Solvency ratio bucketing of the participants in the Baseline, FBS and CBS



Post stress, some insurers rely on transitional measures to comply with the 100% solvency ratio threshold. Figure 13 shows this additional impact on the distribution of the solvency ratios when removing the transitional measures. There are 7 additional participants that fell short of the 100% threshold in the fixed balance sheet, which are not only concentrated to the lowest bucket of FBS of the Figure 12, indicating a relatively widespread effect.

Figure 13: Solvency ratio bucketing of the participants in the Baseline, FBS and CBS without transitional measures



3.1.2 SOLVENCY CAPITAL REQUIREMENT

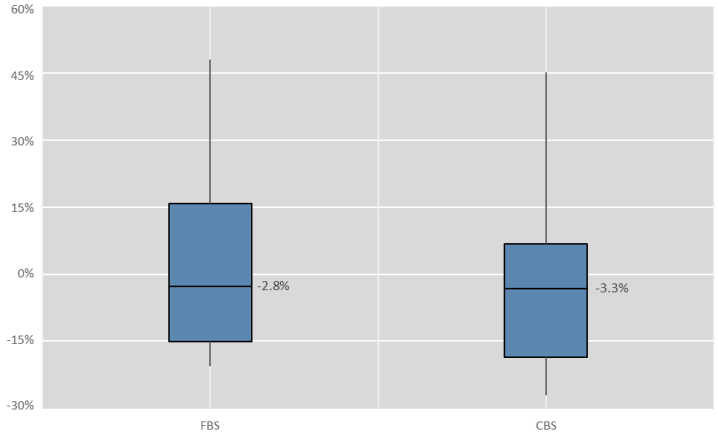
The median relative change in the solvency capital requirement of the sample is slightly negative, -2.8% post stress, turning -3.3% after reactive management actions, indicating that the increase in the aggregate amount (+7.4%, Figure 9) is not the case for all participants. Figure 14 shows that only for an almost 40% of the sample the capital requirement increased. Specifically, this reflects the various dynamics underlying the post stress SCR. For example, the market shocks result in lower future discretionary benefits, hence lowering the technical provisions, which is a beneficial effect at balance sheet level. However, this implies that the post stress loss absorbing capacity is reduced, and depending on the structure of the solvency capital requirements can contribute to an overall increase in the capital requirements. Similar, but not identical, movements apply for the loss absorbing capacity of deferred taxes.

This increase in the SCR seems to be more pronounced in the standard formula users. In this sub-group of participants, the median of the relative change in the solvency capital requirement becomes -1.3% and the 75th percentile +35.3%, whereas for the non-standard formula users the median is -4.3% and the 75th percentile is +3.0%. However, standard formula users show more dispersion also in the other direction with 25th percentile at -17.7% against -12.0% for non-standard formula users.

The reactive management actions shift down the distribution, consistent with a positive effect on the solvency ratio. This means that some of the actions taken (ref. to section 3.3.1), directly affect the SCR e.g., de-risking of assets.

Removing the transitional measures results in more severe impact. The aggregate movement of the solvency capital requirement increases from 7.4% (Figure 9) to 8.8% in the fixed balance sheet and from 3.9% (Figure 9) to 5.4% in the constrained balance sheet.

Figure 14: Relative change in Solvency Capital Requirement (FBS and CBS against Baseline)



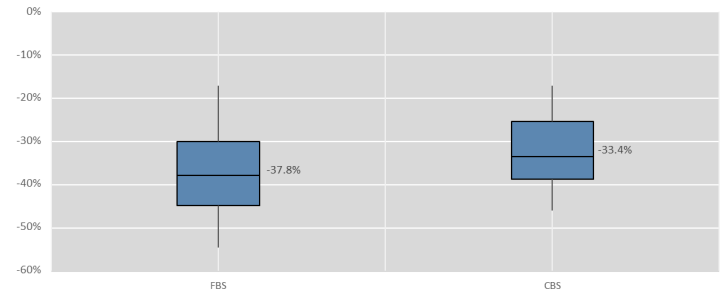
Note: boxplots report 10th, 25th, 50th, 75th and 90th percentile of the distribution

3.1.3 OWN FUNDS

Eligible own funds reduce for all participants, but in heterogeneous way. Figure 15 shows that in the fixed balance sheet the median impact on own funds (-37.8%) is close but still less than the aggregate one (Figure 9, -40.3%). Also, the interquartile range is 14.8 p.p., which more than doubles to 37.3 p.p. looking at the tails (10^{th} and 90^{th} percentiles).

The reactive management actions had a positive impact on the eligible own funds. This is reflected to the upward shift in the distribution in Figure 15. The milder impact in the constrained balance sheet reflects the nature of reactive management actions e.g., retention of dividends, raise of capital (not external). In combination with the effect of reactive management actions for the solvency capital requirement, it can be concluded that a variety of actions have been implemented which eventually provided a relief to all the components of solvency ratio.

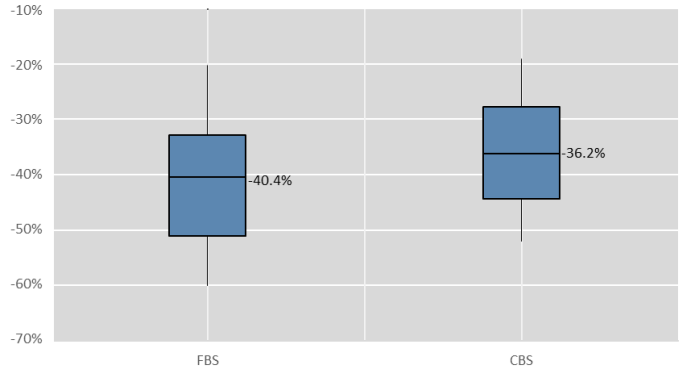
Figure 15: Relative change in the Eligible Own Funds to meet Solvency Capital Requirement (FBS and CBS against Baseline)



Note: boxplots report 10th, 25th, 50th, 75th and 90th percentile of the distribution

Removing the transitional measures the reduction becomes more severe (Figure 16). Comparing it against Figure 15, the reduction is evident across all percentiles, suggesting a widespread effect.

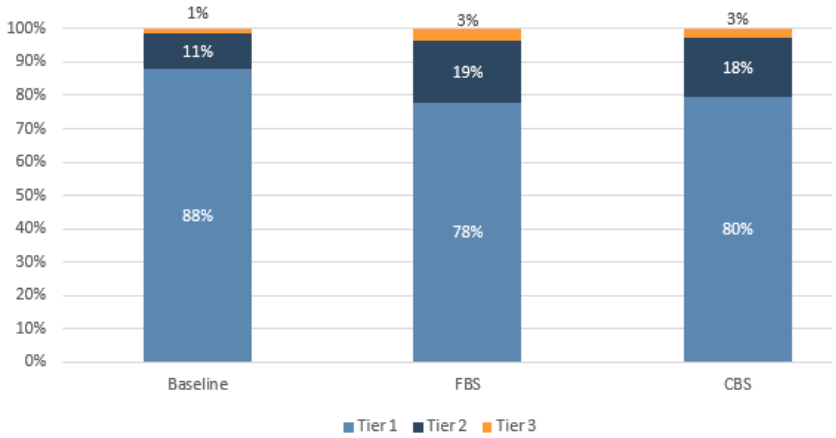
Figure 16: Relative change in Eligible Own Funds without the impact of Transitional measures (FBS and CBS against Baseline)



Note: boxplots report 10th, 25th, 50th, 75th and 90th percentile of the distribution

The quality of the eligible own funds is deteriorating on aggregate after the shocks (Figure 17). The effect on tier 1 can be traced back to the significant aggregate impact on the excess of assets over liabilities, whereas tier 2 and tier 3 elements are in some cases less (or even inversely) affected by the shocks. Consequently, not only the solvency ratio is reduced in the stressed scenario, but also is covered by lower quality capital. For example, in the post stressed scenario, there is (on aggregate) reliance on tier 2 and 3 to cover the SCR. The quality is improved in the constrained balance sheet, indicating that actions taken to increase tier 1 own funds are dominating.

Figure 17: Quality of the Eligible Own Funds

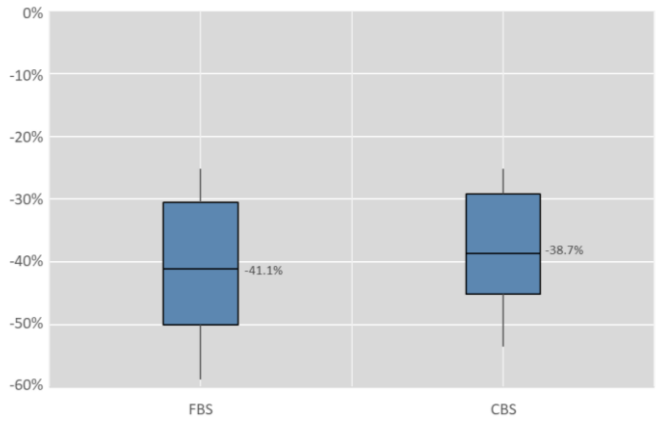


3.1.4 ASSETS OVER LIABILITY RATIO AND EXCESS OF ASSETS OVER LIABILITIES

The distribution of the excess of assets over liabilities suggest more pronounced effect compared to the eligible own funds. Based on Figure 18 the median reduction is 41.1% in the fixed balance sheet (against a reduction of 37.8% for eligible own funds) and it becomes 38.7% after reactive management actions (against a drop of -33.4% for eligible own funds). The same directional effect

(but not magnitude) applies for all other percentiles except for the 75th in the fixed balance sheet, which shows almost identical impact for eligible own funds and excess of assets over liabilities.

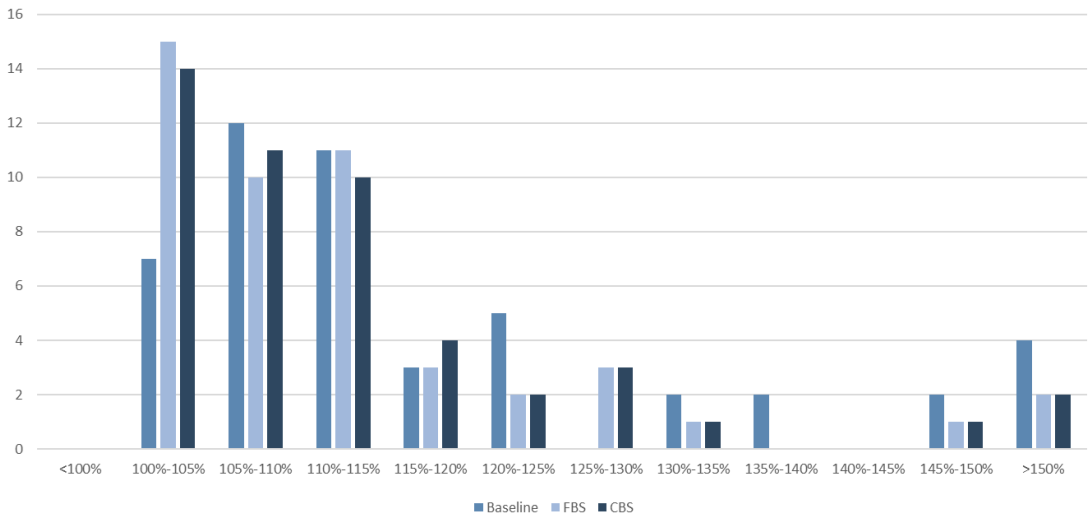
Figure 18: Relative change in excess of assets over liabilities (FBS and CBS against Baseline)



Note: boxplots report 10th, 25th, 50th, 75th and 90th percentile of the distribution

In adverse scenarios the assets are enough to cover obligations to policyholders in all undertakings, and this is not affected by removing the transitionals. Figure 19 shows the distribution for baseline, fixed and constrained balance sheet. Even if the shocks result in less assets relative to liabilities, the strong capital base results in all the participants to have more assets than liabilities in the post stress, even without management actions and transitionals. However, in these cases the effects are more pronounced. The reactive management actions provide a beneficial effect shifting the distribution to the right.

Figure 19: Assets over liabilities ratio bucketing of the participants in the Baseline, FBS and CBS



3.2 LIQUIDITY

The adverse scenario generated material liquidity strains, requiring participants to take actions through adjustments in their investment strategy. However, the ample source of available liquid assets allows insurers to cover the negative net flows generated by the shocks. The cash holdings in December 2023 alone are not enough to cover the outflows expected in the first quarter of 2024 in the stressed scenario, causing a material reduction in the liquidity position (total net flows plus cash and cash equivalent) from EUR 110.3 bn to EUR -40.9 bn in the FBS. Under CBS assumptions, participants show on aggregate a positive liquidity position of EUR 61.1 bn. Nevertheless, liquid asset recalculated after stress in March 2024 are steadily positive, offering an available source of liquidity. In fact, the sustainability indicator, which measures the liquid asset in March 2024 is steadily positive also in the stressed FBS scenario, accounting to EUR 1.6 tn, despite the EUR 721.1 bn decrease with respect to the baseline. In the stressed CBS scenario, the sustainability indicator decreased by EUR 677.6 bn amounting to EUR 1.6 tn, as reported in Figure 20.

Figure 20: Impact of the adverse scenario on the main liquidity indicators

	Baseline	Fixed Balance Sheet		Constrained Balance Sheet	
	Value	Value	Δ (Baseline)	Value	Δ (Baseline)
Liquidity position (Net-flows + Cash and equivalent)	110.3 bn	-40.9 bn	-137.1%	61.1 bn	-44.6%
Sustainability (Net-flows + Cash and equivalent + Other liquid Assets with Haircut)	2,282.6 bn	1,561.4 bn	-721.1 bn	1,605.0 bn	-677.6 bn

The mass lapse shock, under the assumption of full pay-out of the surrenders within the 3-month time horizon[13], is the main stress driver of the liquidity outflows for most insurers (especially within life business). In fact, the surrender shock causes severe outflows in the traditional life business leading to an increase from EUR 30.9 bn in the baseline to EUR 339.3 bn in the stressed scenario. For UL/IL business, the surrender outflows increase from EUR 18.1 bn to EUR 140.6 bn under the stressed scenario. The strong deterioration caused by the surrender shock is not compensated by the positive contribution brought by the matching adjustment portfolios/ring fenced funds (MA/RFF) and non-life business which, also under the adverse scenario, provide cash inflows, although on a more limited extent than in the baseline.

The need of cash forced insurers to move from net-buyers to net sellers of assets. At aggregated level they became net asset sellers in the stressed scenario, the net transactions moved to sell a total of EUR 507.3 bn in FBS and even more in the CBS (EUR 578.9 bn), while the amount sold in the baseline accounts for EUR 328.9 bn. The most sold asset classes were government securities and listed equities. Reactive management actions, such as use of repo agreements, use of committed

[13] Assumption on the application of the shocks in the liquidity component can be retrieved from section 5.2 of the Technical Specifications.

credit lines and cut of dividends and variable remuneration were not sufficient to cover the outflows.

In terms of stocks, the availability of sufficient liquid assets and the reduced liquid liabilities helped sustaining the liquidity positions of the participants even after the application of the shocks. In particular, the liquid asset ratio (defined as the ratio of liquid assets[14] after haircuts over total assets) was broadly stable, decreasing by less than 2 p.p. from 41.8% in the baseline (December 2023) to 39.0% in the FBS scenario (March 2024) and to 40.4% in the CBS (March 2024). Similarly, the liquid liabilities ratio for life, UL/IL and MA/RFF business dropped by 1.2 p.p. in the FBS, from 41.6% to 40.4%.

The results confirm the findings of the 2021 exercise: insurers held sufficient liquid assets to cover liquidity strains. The similar set of insurance specific shocks (e.g., mass lapse, claims inflation) confirms that for both the exercises the main impact is generated by the surrenders. As in 2021 insurers turns from net buyer in the baseline to net sellers, with highly liquid fixed income assets being the most sold asset class under both FBS and CBS.

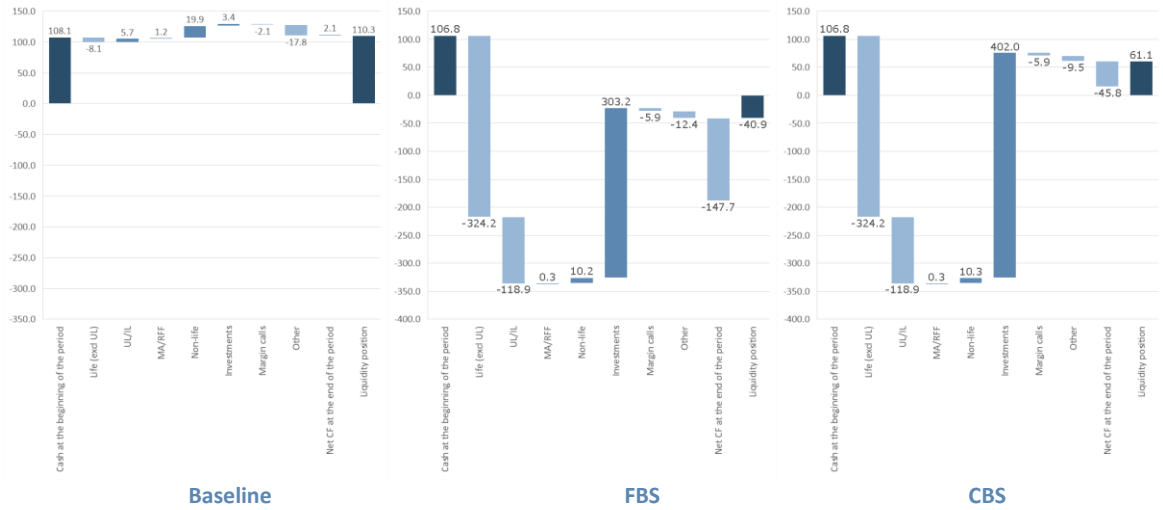
3.2.1 LIQUIDITY POSITION AND SUSTAINABILITY

The overall liquidity position[15] of the participants turned to a negative value under the stressed scenario, resulting in a shortfall of EUR – 40.9 bn in the FBS from a starting amount of EUR 106.8 bn (Figure 21) Figure 21**.** The deployment of reactive management actions allowed to restore the liquidity position to EUR 61.1 bn, despite still being significantly lower than the liquidity position in the baseline (EUR 110.3 bn). In the CBS, the cash raised via the sale of assets is higher than in the FBS mainly explaining the difference. At individual level, the distribution of the total net cash flow position of the participants shows an important change between the baseline and the FBS, as the baseline median (EUR 7.7 mil) becomes negative in the FBS (EUR -85.6 mil). In the CBS, the distribution is more concentrated and shifts towards higher values than in the FBS, but the median is still negative at EUR -5.4 mil.

[14] Liquid assets are defined in line with the Technical Specifications, paragraph 73 and 74.

[15] The liquidity position is calculated as the sum of the *cash and cash equivalents* in December 2023 and the *total net cash flows* measured in the first quarter of 2024. It shows whether the total net cash flows that occurred within the 3-month time horizon can be paid with the cash holdings available at the beginning of the period (December 2023).

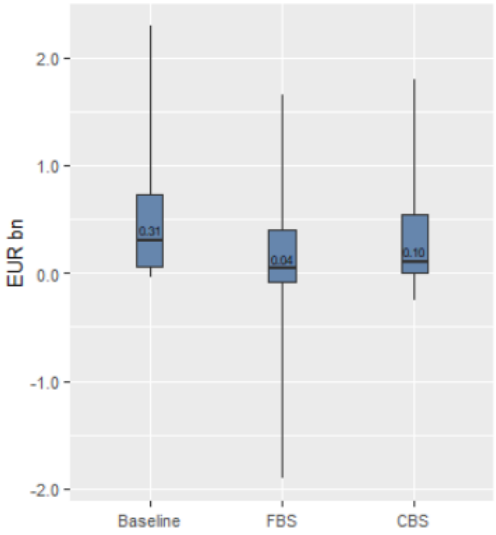
Figure 21: Liquidity position (Net cash-flows + Cash and cash equivalent as December 2023) in the baseline, FBS and CBS. Values in EUR bn.



Focusing on the evolution of cashflows, the most severe strain is caused by the impact of the mass lapse shock on the traditional life business, already absorbing liquidity in the baseline with EUR -8.1 bn. Its impact is heighted to EUR -324.2 bn in the FBS and CBS stressed scenario. The UL/IL business cash-flows which, differently from the traditionally business, were positively contributing to the liquidity in the baseline (with EUR 5.7 bn), are also heavily impacted by the prescribed shocks and resulted in a cash-outflow of EUR 118.9 bn both in the FBS and CBS stressed scenario. On the other hand, MA/RFF and non-life business could only partially counterbalance the impact of the stress on the life business, being less material. For MA/RFF business the flows drop from EUR 1.2 bn in the baseline to EUR 254.7 mil in the stressed (both FBS and CBS) scenario and for the non-life business the flows drop from EUR 19.9 bn in the baseline to EUR 10.2 bn in the FBS scenario and EUR 10.3 bn in CBS scenario. To compensate these negative technical flows, investment flows increased strongly from EUR 3.4 bn to EUR 303.2 bn in the FBS and to EUR 402.0 bn in the CBS.

The median insurer held enough cash to cover the liquidity shortfall under the adverse scenario (Figure 22). The distribution of the liquidity position in March 2024 computed as the total Net cash flows plus the Cash and cash equivalent as of December 2023, showed that the aggregate cash shortage is mainly driven by the 25th percentile of the distribution in the FBS. Overall, the median liquidity position remains positive both in the FBS and CBS, with a drop of the median in the baseline from EUR 306.5 mil to EUR 42.5 mil in FBS and EUR 104.4 mil respectively.

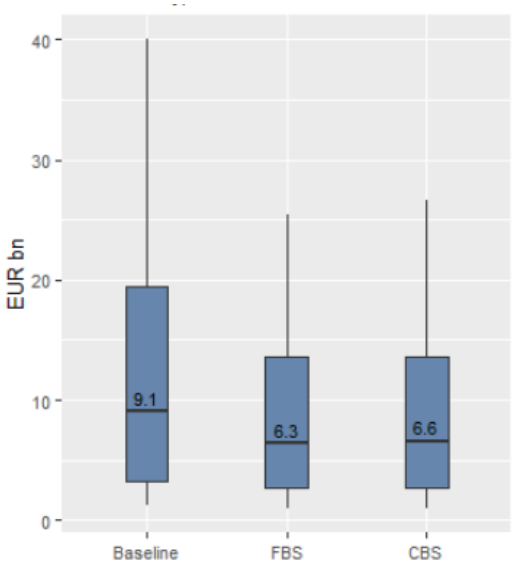
Figure 22: Distribution of liquidity position (Net cash flows + Cash as of December 2023)



All participants are able to withstand the liquidity shocks, as shown by the sustainability indicator (Figure 23 and Figure 24). The sustainability indicator, computed as the Liquidity position plus other liquid assets, projects, in absolute terms, the potential liquidity sources up to March 2024, considering also the net investment flows. It shows whether, in case of net outflows, the undertakings hold a sufficient amount of liquid assets to cover the net outstanding amounts between December 2023 and March 2024 given the prescribed scenarios. The results show that all participants can sustain the negative net cash-flows with other liquid assets[16] in the baseline as well as in the FBS and CBS. On aggregate, insurers hold EUR 2.3 tn to cover the net flows in the baseline. This drops by EUR -720.7 bn in the FBS and EUR - 676.9 bn in the CBS. In fact, at individual level the distribution of the sustainability indicator shows that the median sustainability indicator drops from EUR 9.1 bn in the baseline to approximately EUR 6.3 bn in the FBS and EUR 6.6 bn in the CBS with no significant distributional change among the two adverse scenarios. This seems to be the result of the strong position of liquid assets that outweighs the negative net cash flows.

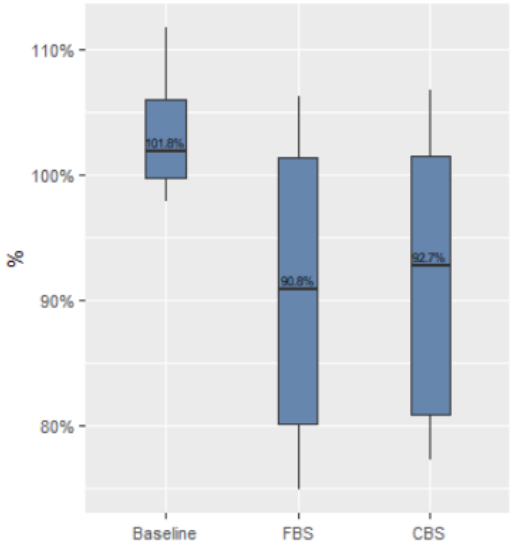
[16] "Other liquid assets" refers to the assets different from cash that are deemed liquid accordingly to their liquidity haircut, as reported in paragraphs 73 and 74 of the Technical Specification.

Figure 23: Sustainability indicator (Net cash-flows + cash and equivalent + other liquid assets) as of March 2024, in the Baseline, FBS and CBS



Note: boxplot reports 10th, 25th, 50th, 75th and 90th percentile of the distribution

Figure 24: Sustainability indicator scaled by liquid assets in December 2023: fraction of liquid assets as of March 2024 remaining after paying the stressed net cash flows adjusted for the purchase and sale of assets over the liquid asset available in December 2023, in the Baseline, FBS and CBS



Note: boxplot reports 10th, 25th, 50th, 75th and 90th percentile of the distribution

The liquidity outflows[17] caused by the shocks can be covered by the liquid assets held in December 2023 under the FBS and the CBS approach. This is measured by the sustainability indicator scaled by Liquid Assets at December 2023[18] (Figure 24). It reflects how Liquid assets in March 2024 change compared to Liquid assets in December 2023 based on the adverse developments. Also, it shows whether, in case of net outflows, the undertakings hold a sufficient amount of liquid assets to cover the net outstanding amounts between December 2023 and March 2024, given the prescribed shocks. Note that a ratio above 100% implies that the liquid assets have improved in March 2024 compared to December 2023, while a ratio between 0% and 100% means that the liquid assets in March 2024 are lower than the ones in the previous quarter. On the contrary, if this ratio would have been negative then liquid assets would have not been enough to cover the cash outflows. It should be noted that the sustainability indicator scaled is specifically designed to assess the liquidity position of insurers and is not part of any regulatory framework. As shown in Figure 24, the median ratio moves from 101.8% in the baseline (i.e. shows that Liquid assets in March 2024 have improved compared to Liquid assets in December 2023) to 90.8% in the FBS and 92.7% in the CBS which implies a deterioration of the liquid assets' holdings after the application of the shocks. Overall, in

[17] These are computed as net cash flows adjusted for sales and purchase of assets occurred during the three months' time horizon (end December 2023 to end March 2024).

[18] This indicator is computed as the ratio between Cash in December 2023 + Total Net cash flows + Other liquid assets in December 2023 + Δ (purchase and sale of assets) over Liquid assets in December 2023. Haircuts are applied to obtain liquid assets.

the baseline situation the distribution of the sustainability indicator scaled appears more stable, with values consistently above 100%, meaning that most participants have an improved liquidity situation after the 3 months' time horizon, while in the FBS and CBS distributions show wider variability and a general deterioration in their liquidity values.

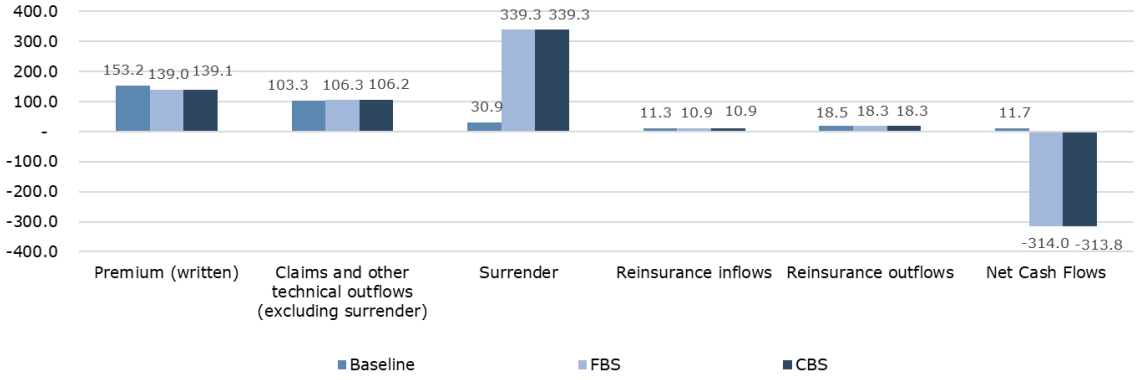
3.2.2 FLOWS

This section elaborates on the two relevant constituents of the flows: the technical flows (3.2.2.1) and the investment flows (3.2.2.2).

3.2.2.1 TECHNICAL FLOWS

The main strain on technical flows for both traditional life and non-life business was represented by the increase in surrenders triggered by the mass lapse shock (Figure 25). This caused surrender flows to be more than 10 times higher than in the baseline. Premia decreased from EUR 153.2 in the baseline to EUR 139.0 in the FBS, in line to the prescribed shock. Finally, changes in claims and in reinsurance flows were negligible.

Figure 25: Technical net cash-flows in the Baseline, FBS and CBS excluding UL/IL and MA/RFF. Values in EUR bn.

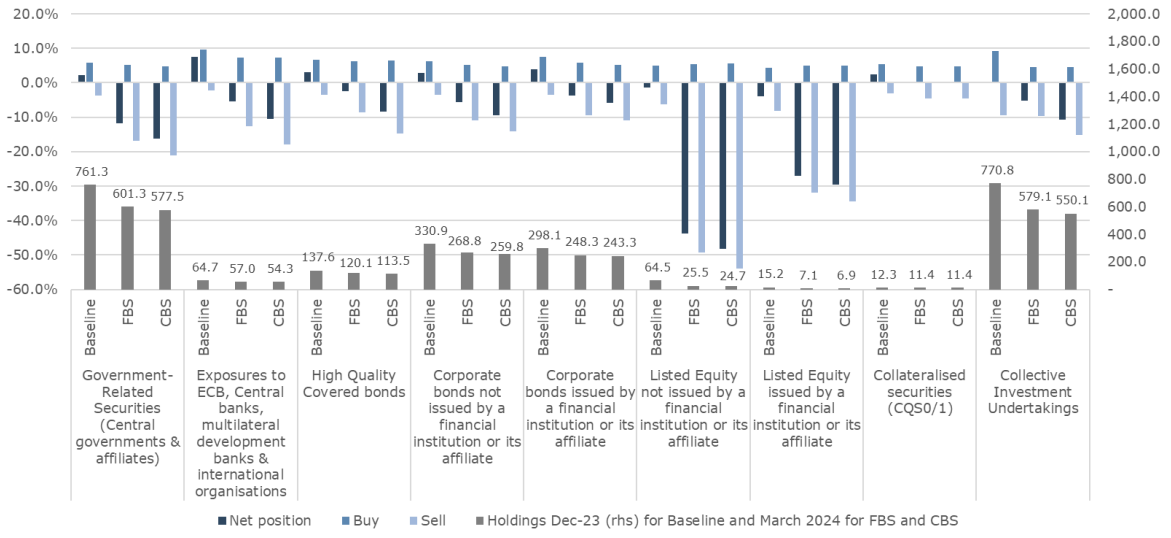


3.2.2.2 INVESTMENTS

The investment flow shows that participants moved from being net buyers of assets in the baseline to net sellers in the stressed scenario to compensate for the losses. At aggregate level, investment net flows for the life and non-life portfolios changed from net buying (EUR 76.9 bn) in the baseline to net selling in the FBS (EUR -122.7 bn) and in the CBS (EUR -202.9 bn) respectively. In relation to UL/IL portfolio, their net buying position changed from EUR 12.3 bn in the baseline to net selling EUR -87.2 bn in the FBS and to EUR -105.9 bn in the CBS. For the MA/RFF business, insurers remained net buyers of assets having a rather stable position accounting to EUR 4.0 bn in the baseline and to EUR 3.2 bn in the FBS and CBS.

For traditional business (life and non-life) net selling occurred across all asset categories with the exception of collateralised securities, which remained stable. Figure 26 compares the holding position of the different asset classes in the Baseline (December 2023), FBS and CBS (both in March 2024) against the flows of purchase, sale and net positions as a share of the asset holdings in December 2023. In particular, insurers turned from purchasing to selling in the stressed scenario a number of assets, namely: government securities (from 2.1% in the baseline to -11.7% in FBS and -16.3% in the CBS), fixed income issued by ECB, central banks, multilateral development and international organisations banks (from 7.5% in the baseline to -5.3% in the FBS and -10.5% in the CBS), high quality covered bonds (from 3.1% in the baseline to -2.3% in the FBS and -8.3% in the CBS), corporate bonds not issued by a financial institution or its affiliate (from 2.9% in the baseline to -5.7% in the FBS and -9.4% in the CBS) and corporate bonds issued by a financial institution or its affiliate (from 4.0% in the baseline to -3.7% in the FBS and -5.8% in the CBS). On the other hand, insurers further sold listed equity not issued by a financial institution or its affiliate (from -1.4% in the baseline to -43.8% in the FBS and -48.3% in the CBS), listed equity issued by a financial institution or its affiliate (from -3.9% in the baseline to -26.9% in the FBS and -29.5% in the CBS) and Collective Investment Undertakings (from -0.2% in the baseline to -5.2% in the FBS and -10.7% in the CBS).

Figure 26: Liquid investment flows (excluding UL/IL and MA/RFF portfolios) relative to holdings in the Baseline, FBS and CBS. Values in EUR bn.



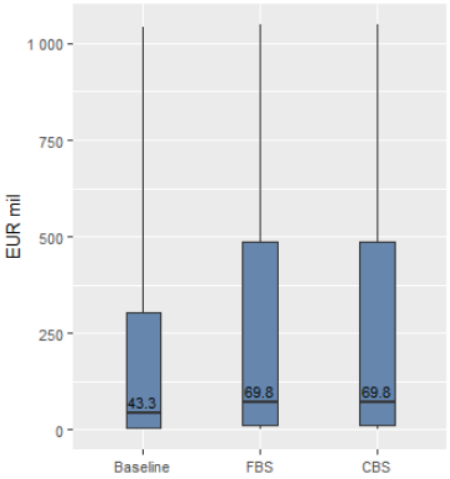
Note: The starting point is given by the asset holdings in December 2023 (Stocks data for baseline and stressed), then sales and purchases occur within the 3 months' time horizon (Flows data for stressed and stressed with reactive management actions scenario) leading to the recalculation of the asset holdings in March 2024 for both FBS and CBS.

Insurers with UL/IL portfolios became as well net sellers of assets in the stressed scenario but to a milder extent than those with traditional life business. As for UL/IL business assets and liabilities move more synchronically and the policyholders bear the losses on the asset side of the balance sheets, their trading activities were less extensive than for the traditional business. To probably keep

benefiting from investing in coupons and maturing bonds at higher rates, insurers with UL/IL business kept purchasing, although on a more limited extent, fixed income issued by ECB, central banks, multilateral development banks and international organisations (for both FBS and CBS scenario), corporate bonds not issued by a financial institution or its affiliates (only in the FBS scenario) and corporate bonds issued by a financial institutions or its affiliates. On the other hand, the most sold asset categories were high quality covered bonds, equity and collective investment undertakings.

Aggregated margin calls flows, accounting for EUR -2.1 bn in the baseline, further contribute to the depletion of liquidity in stressed scenario, leading to an EUR -5.9 bn outflow in the FBS and CBS. Given that insurers hedge interest rate risk in both directions, the net amount is due to an increase in the net outflows which outweighs the more modest increase in inflows. In fact, margin/collateral outflows in the stressed FBS and CBS increase to EUR 17.5 bn from EUR 12.8 bn in the baseline, while the inflows only increase in the FBS and CBS stressed scenario to EUR 11.6 bn vs. EUR 10.7 bn in the baseline. Out of the 132 participants only 63 entities reported these flows as not all insurers hedge with derivatives against a change in interest rates. Looking at the distribution of these flows for the derivative users (Figure 27), the median margin call moves from EUR 43.3 mil in the baseline to EUR 69.8 mil in the FBS and CBS due to the increase in interest rates. Furthermore, the distributions are skewed above the median with companies having to pay collateral of more than EUR 1.0 bn in the 90th percentile.

Figure 27: Distribution of total net flows on margin/collateral calls in the baseline, FBS and CBS (only 63 solo undertakings included)



Note: boxplot reports 10th, 25th, 50th, 75th and 90th percentile of the distribution

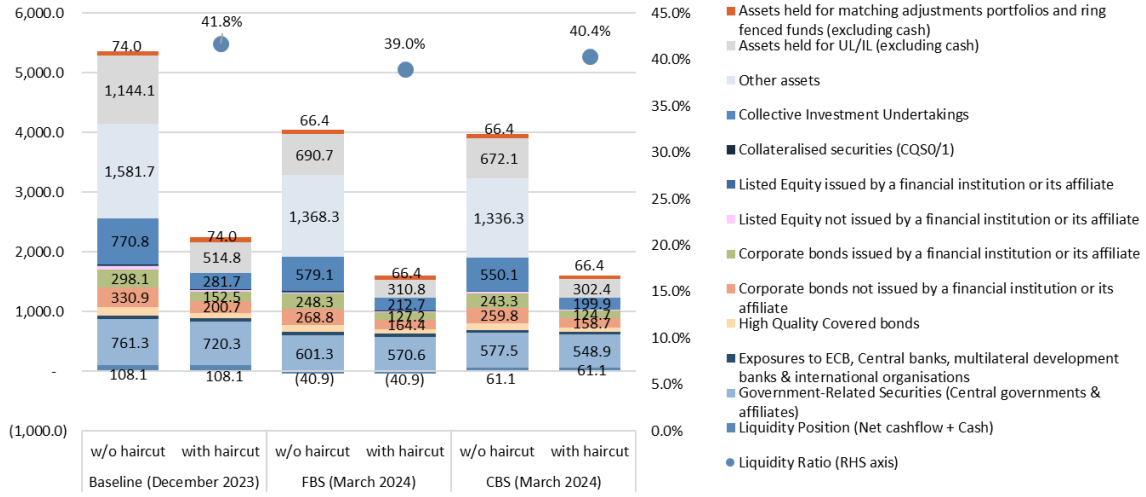
3.2.3 STOCKS - LIQUIDITY OF ASSET AND LIABILITY PORTFOLIOS

Overall, the level of liquid assets and liabilities remained stable after the prescribed shocks, considering the impact of liquidity haircuts on asset portfolios and liability holdings. The liquid

asset ratio, defined as the ratio of liquid assets after the application of haircuts over total assets remained stable in the stressed scenario, with a marginal reduction from 41.8% in the baseline (December 2023) to 39.0% in the FBS (March 2024) and to 40.4% in the CBS (March 2024) (Figure 28). The comparison between the baseline (December 2023) and the stressed scenario in March 2024 (FBS and CBS) encompasses both the changes due to the application of the market shocks prescribed by the technical specifications but also the changes driven by the insurance specific shocks reflected in the new cash holdings.

Market shocks are the main driver that explain the drop in liquid assets ratio. Analysing the liquid asset ratio in its numerator and denominator, it results that on aggregate total assets without haircut decreased by 25.4% between the baseline (December 2023) and the FBS (March 2024) and by 25.8% for the CBS (March 2024). This further splits into a reduction of 18.4% due to the application of market shocks (i.e. comparing the December baseline stocks with the December stressed stocks without haircut) and with a further reduction of 6.9% in the FBS and 7.4% CBS due to the asset reallocations and lower cash holdings driven by the increased net outflows (comparing March 2024 stressed stocks with December 2023 stressed stocks of assets). The denominator, the liquid assets after application of the haircuts, decreases by 30.3%. This is further split into a reduction of 17.6% due to market shocks (i.e. comparing December baseline stocks with December stressed stocks after haircuts) and a further reduction of 12.7% in the FBS and of 10.8% CBS.

Figure 28: Total assets, liquid assets with/without haircuts and asset liquidity ratio in the Baseline, FBS and CBS. Values in EUR bn.

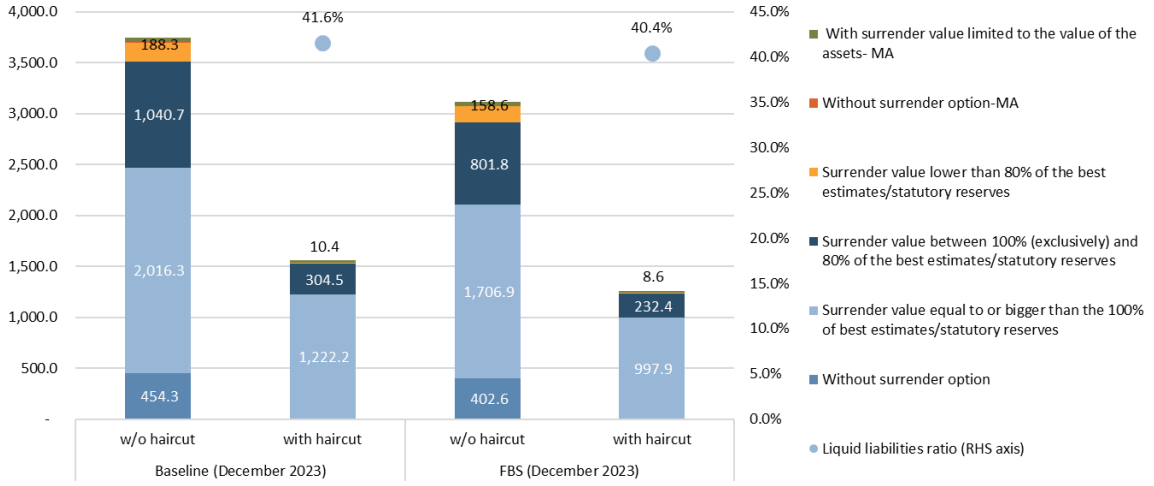


The more illiquid are the liabilities[19] the less exposed to liquidity outflows an insurer is. The liquid liabilities ratio for life, UL/IL and MA business, defined as the ratio of liquid liabilities (after haircuts)

[19] Liquid liability depends on the extent they are surrenderable by policyholders.

to total liabilities, decreased by 1.2 p.p. in the FBS, from 41.6% to 40.4% (Figure 29). The liquid liabilities (numerator) decreased by 19.3% in the FBS, while total liabilities decreased by 17.0%.

Figure 29: Total liabilities, liquid liabilities and liquidity ratio (excl. non-life) with/without haircuts in the Baseline and FBS. Values in EUR bn.



3.3 REACTIVE MANAGEMENT ACTIONS AND POTENTIAL EXTERNALITIES

Spillover effects are generated by the reactions of undertakings to adverse economic and market developments. Reactions, according to the EIOPA stress test framework[20] go under the form of embedded or reactive. To offer a comprehensive assessment of the potential externalities both types of actions are considered in this section. This is particularly relevant wherever the line between reactive and embedded management action is thin and varies according to the approach taken by the individual insurance undertakings. The reference goes especially with the algorithmically embedded nature of investment/disinvestment rules on the assets, with sales of assets identified as one of the most used reactive management actions, applied by the participants both in the capital and in the liquidity component.

The application of the reactive management actions for the capital component was anchored to the compliance with the participants' risk management framework, and not only to the fulfilment of the regulatory solvency ratio. This methodological enhancement granted a more harmonised and realistic approach to the application of the RMA and increased from 19 to 26 the number of participants calculating their post stress position under constrained balance sheet, with respect to

[20] Information on the definition and classification of management actions can be retrieved from Section 2.3.3 – Management Actions of the methodological paper on insurance stress testing: EIOPA (2019) methodological principles for insurance stress testing, available here.

the previous stress test exercise. The absence of regulatory metrics and thresholds did not allow to reach the same level of consistency in the application of the RMA in the liquidity component.

Relevant comparison to be made to assess potential spillover effects is the volume of fixed income assets sold by the participants, against the volume of similar asset classes traded at EEA level on a quarterly basis.

3.3.1 CAPITAL COMPONENT

Under the constrained balance sheet assumption, participants were allowed to apply a set of reactive management actions provided that they are contained in their risk management framework, and that they are realistic and plausible to be applied under the adverse conditions depicted in the scenario.[21] As such, additional measures may be available to participants, which adds an additional layer of buffer in the results, but also potentially additional impact from a macroprudential perspective.

Participants, in line with their risk management frameworks, reported different individual levels of thresholds for the solvency position to trigger further management actions. As such, the 22 participants that did not apply RMAs did not fall below this trigger level in the FBS results. The number of applied reactive management actions by type are displayed in Figure 30. In total 26 out of the 48 participants reported together 95 RMAs. This results in 22 participants that did not choose to use any RMAs to calculate a strengthened solvency position in the constrained balance sheet approach. The number of RMAs and their impact vary significantly. 6 participants used only one RMA, while one participant reported 10 different RMAs.

Figure 30: Number of applied RMAs by type (capital component)[22]

Type of RMA	Number of RMAs applied	Number of participants using the RMA
Investment strategy (e.g., de-risking)	25	16
Retention of dividends	21	20
Other	14	8
Capital raise: recapitalisation/ issuance of subordinated debt (not external)	12	9
Management of expenses (further than embedded management actions)	9	9
Reduction of discretionary benefits (further than embedded management actions)	7	6
Reinsurance strategy	6	4
Approved changes in the SCR calculation	1	1

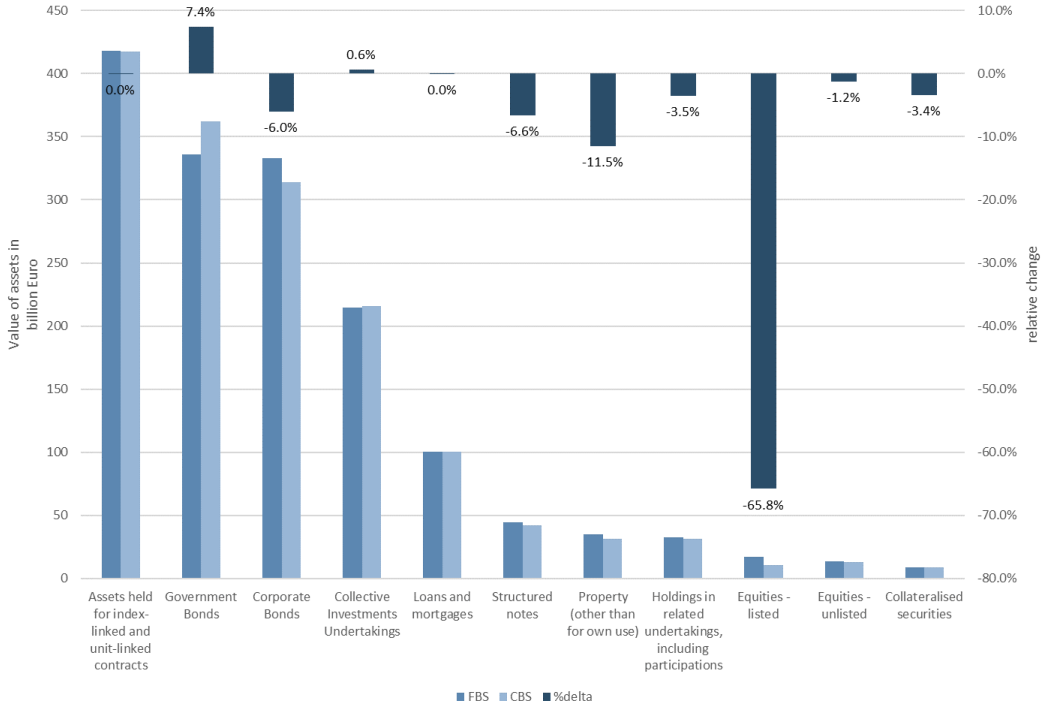
[21] Provisions on the application of the reactive management actions can be retrieved from section 4.4 of the technical specifications, which can be found here.

[22] One participant mentioned distinctively the suspension of share buybacks and dividends. Also, in relation to the reinsurance strategy, these were justified and reasoned in line with the guidance of Technical Specifications and Q&As.

Main RMAs reported are investment strategy (e.g. de-risking), dividend retention, internal capital raising, expense management, reduction of discretionary benefits beyond embedded management actions, reinsurance and approved changes in SCR calculations. These management actions improve solvency ratios by increasing own funds or reducing capital requirement (e.g. lower risk from assets, retention of dividends, risk mitigation through reinsurance). However, de-risking measures could, in the long run, affect the profitability and sustainability of business models based on long-term guarantees. Other measures, like reduction of future expenses, have a direct impact on the current value of the future cash-out flows and thereby reducing the technical provisions and improving the own funds, on a long-term basis an intensive reduction in expenses will likely impact business operations.

Main direct externalities are generated by the change in the asset allocation amid de-risking strategies (Figure 31). The participants using a reactive management action relating to the investment strategy show an increase in government bonds (+ EUR 26.8 bn) and a decrease in asset categories with higher capital charge (e.g., in standard formula) in the market risk such as corporate bonds (EUR -18.8 bn), structured notes (- EUR 2.8 bn), property (- EUR 3.6 bn) and most significantly listed equity (EUR -7.1 bn). Replacing equity with government bonds reduces the capital requirements but may also have a negative impact on future returns.

Figure 31: Change in asset allocation, of participants using de-risiking RMA



Indirect consequences on the individual participants might stem from the retention of dividends. The 20 participants enforcing this strategy foresee a reduction of the foreseeable dividend of 91.4%

retaining in total EUR 19.7 bn until a given SCR ratio is reached.[23] While the action has a direct positive impact on the available own funds, the immediate negative impact on shareholders might affect the ability of the company to attract future investments.

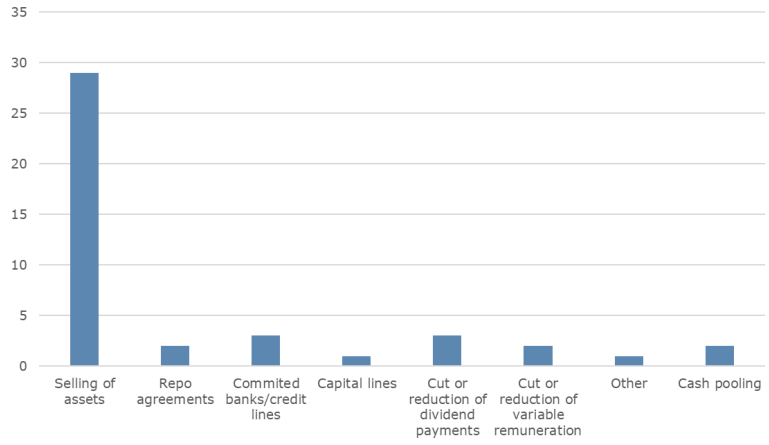
3.3.2 LIQUIDITY COMPONENT

The assessment of the RMAs in the liquidity component should acknowledge two differences with respect to capital component. Firstly, the absence of commonly acknowledged framework and metric on liquidity position of insurers did not allow to identify a shared indicator and related threshold(s) to trigger remedial actions upon its breach. Secondly, the reporting structure of investment flow allows to aggregate together effects stemming either from embedded or reactive management actions. This latter facilitates a more holistic understanding of the externalities.

Reactive management actions were applied by 31 entities belonging to 14 groups. Entities reported the application of 44 RMAs distributed in 8 categories (Figure 32). The most applied reactive management action was, by large, the sale of assets (29 cases) followed by the use of pre-committed/funded credit lines and repo agreements (6), and the cut of dividends and variable remuneration (6). Cash pooling was identified by 2 entities, but the cash pooling will be treated separately.

Most of the actions have impact on the asset side of the balance sheet due to the nature of the liquidity risk and the way participants were instructed to apply the shocks in the liquidity component, i.e., pay-out of the surrender amounts amid lapse shock within the 3-month time horizon of the exercise.

Figure 32: Number of RMA applied by type (liquidity component)



[23] The quantification only captures the effect coming through the item foreseeable dividends, although other amounts could have been impacted by the retentions.

Entities identified as a main trigger for the application of RMA the shock to lapse, followed by the reduction in the written premia and increase in the cost of claims (see Figure 33 for a full rank of the shocks). The indication that emerges from the table clearly identifies the shocks with direct impact on the in- and out-flows as a trigger of the application of the RMA, signalling the different nature of liquidity risk and capital risks not only in terms of impacts but also in terms of needed remedial actions.

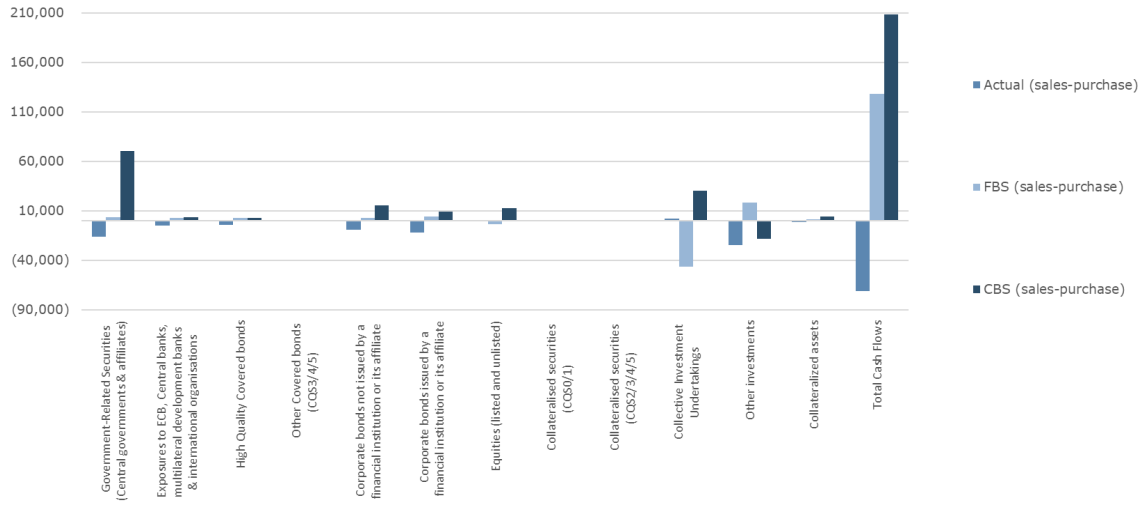
Figure 33: Triggering shock

Rank of the impact (1 = Highest; 12 = Lowest)	Mass lapse	Increase of non-life cost of claims	Increase of life and non-life expenses	Shock to reinsurance in-flows	Reduction in written premia	Change in Swap rates	Change in Sovereign bond spreads	Corporate bond and covered bond spreads	Shocks to Equity prices	Change in Real estate prices CRE/RRE)	Shocks to RMBS	Other assets prices (PE, HF, REITs, commodities)
1	24	1	0	0	8	0	0	0	0	0	0	0
2	3	7	0	2	10	3	2	2	0	0	0	0
3	0	6	1	4	1	0	4	1	1	0	0	0
4	0	0	0	5	0	1	2	5	1	1	1	1
5	1	0	1	0	0	1	1	0	3	0	0	0
6	0	0	0	1	0	1	2	1	0	2	0	1
7	0	0	0	0	0	0	0	2	0	0	0	2
8	0	0	0	0	1	1	0	0	0	0	2	0
9	0	0	0	0	2	0	0	0	1	0	0	0
10	0	2	0	2	0	0	0	0	0	1	0	0
11	0	0	0	0	0	0	0	0	0	0	0	1
12	0	1	2	1	0	2	2	2	2	2	3	2

Insurers, that in the baseline were net buyer in the non-UL/IL portfolios for EUR 71.4 bn, turn to net seller generating a net outflow on their investment position of EUR 128.2 bn in the FBS and EUR 208.5 bn, when RMA are allowed. Figure 34 shows the investment behaviour on the different asset classes in the general account. It should be noted that the graph reports only actions taken by insurers and neglects the flows stemming from the fixed income assets expiring in the 3 months of the assessment. Looking at the different asset classes it emerges that under FBS insurers become net sellers of most of the direct investments in liquid assets, except for equities. Exposures to Collective Investment Undertakings shows an opposite behaviour with larger investments flowing compared with the baseline. Flows on CIUs are keeping the net investment flows of non-UL/IL portfolio negative.

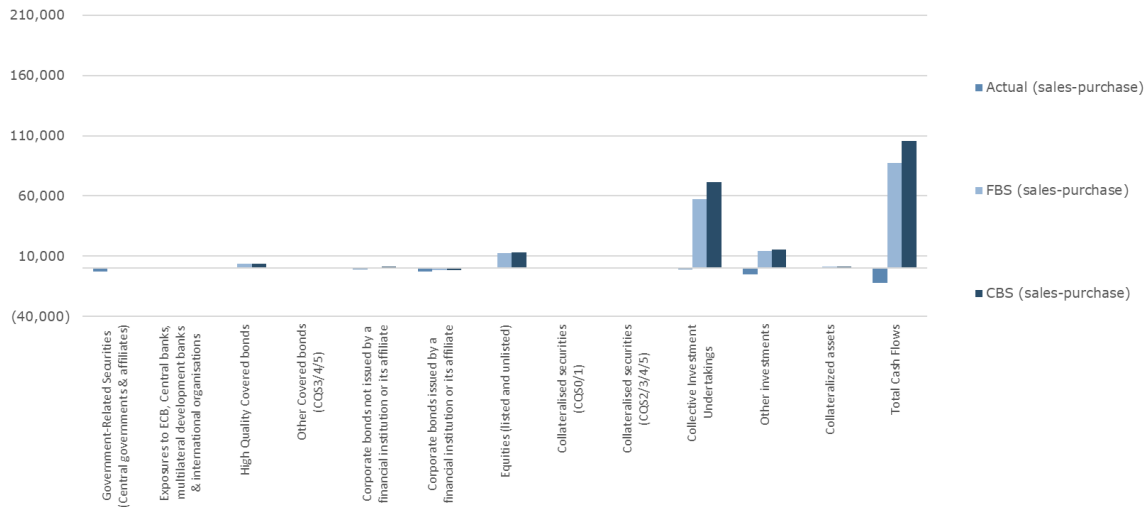
The application of RMA enhances the materiality of the sales across all the asset classes, with significant sales on government bonds (EUR 73.8 bn), followed by corporate bonds both financial and non-financial (EUR 29.0 bn in aggregate) and equity (EUR 12.6 bn). Under CBS also CIUs concur to the amount sold with a net outflow of EUR 30.6 bn.

Figure 34: Change in the investment strategy non-UL portfolios. Values in EUR mil.



Due to the nature of the business, UL/IL portfolios are marginally affected by RMA. Figure 35 shows how the behaviour of the insurers is similar under FBS and CBS resulting in net sales of EUR 87.2 bn and EUR 105.9 bn respectively from a baseline net-purchase of 12.3 bn. Being the portfolio in which risks are transferred[24] to the policyholders, request of lapse is directly converted into a sale of the assets backing the position to be surrendered. As such, any reactive action is limited to cover other shocks which as shown previously have limited impact compared to the lapses. Collective investment undertakings are the asset class with the largest impact moving from a net purchase of EUR 0.92 bn to a net sale of EUR 65.7 bn in the FBS and EUR 71.7 bn in the CBS.

Figure 35: Change in the investment strategy UL portfolios. Values in EUR mil.



[24] For example, market fluctuation risks.

Independently by the distribution of the assets in general accounts and separate accounts, what matters for the potential spillover effects on other markets is the aggregated investment behaviour of insurers under adverse scenario which substantiates in a move from net purchases of EUR 93.2 bn in the baseline to a net sales of EUR 305.6 bn in the CBS.[25] Same considerations but with lower materiality given the size of the portfolio can be extended to the MA and RFF investments.

The net amount sold compares with an average of approximately EUR 7.5 tn of average quarterly trading volume of bonds at EEA level.[26] In terms of percentage, the net amount of fixed income assets sold by the insurers (within the 3 months' time horizon of the liquidity assessment) and hence needs to be absorbed by the market stands at 4.0% of the average quarterly trade.

[25] The net sales shall be considered in the context of Technical Specifications instructing insurers to pay out claims and surrenders within the three months' time horizon of the assessment.

[26] The quarterly traded volume is based on the ESMA (2024) EU Securities Markets 2023, available at https://www.esma.europa.eu/sites/default/files/2024-05/ESMA50-524821-3149_EU_Securities_Markets_2023.pdf. The report covers the time horizon from 2021 Jan – 2022 Dec.

4 CONCLUSIONS AND NEXT STEPS

4.1 CONCLUSIONS

The narrative of the stress test exercise continues to be relevant given the current economic context. The adverse scenario is based on the uncertainty deriving from the economic consequences of a re-intensification or prolongation of geopolitical tensions, resulting in an inflationary shock with mild long-term interest rate increase, and substantial repricing of market risk. These are further enhanced by insurance specific shocks, namely mass lapse and claims inflation, still relevant risks for the insurance sector. Therefore, considering that the scenario remains meaningful (but not a prediction) given the current conditions, the results presented in the report provide relevant information on the vulnerabilities and strengths of the sector.

The scope of the exercise ensures that the results are also relevant from a European and financial stability perspective. The sample was built to cover a relevant part of the EEA market and be inclusive across the jurisdictions. This resulted in 75% of EEA market based on Solvency II total assets.

The results show that the overall European insurance industry is well capitalised. This strong starting position provides enough capital to withstand the materialization of the tail events embodied in the extreme but plausible scenario of the stress test, resulting in a loss of excess of assets over liabilities of EUR 285.6 bn. However, in some cases (8) the post stress capital requirement is not met. In these cases, the reactive management actions are needed to ensure coverage of the solvency capital requirement but are not necessary (nor the transitional measures) to cover liabilities. However, reactive management actions have been applied by more participants, not necessarily breaching solvency ratio, to ensure compliance with their internal risk management framework. Overall, not substantial externalities emerged by the application of the reactive management actions, under the caveat that the embedded ones could not be accounted for this.

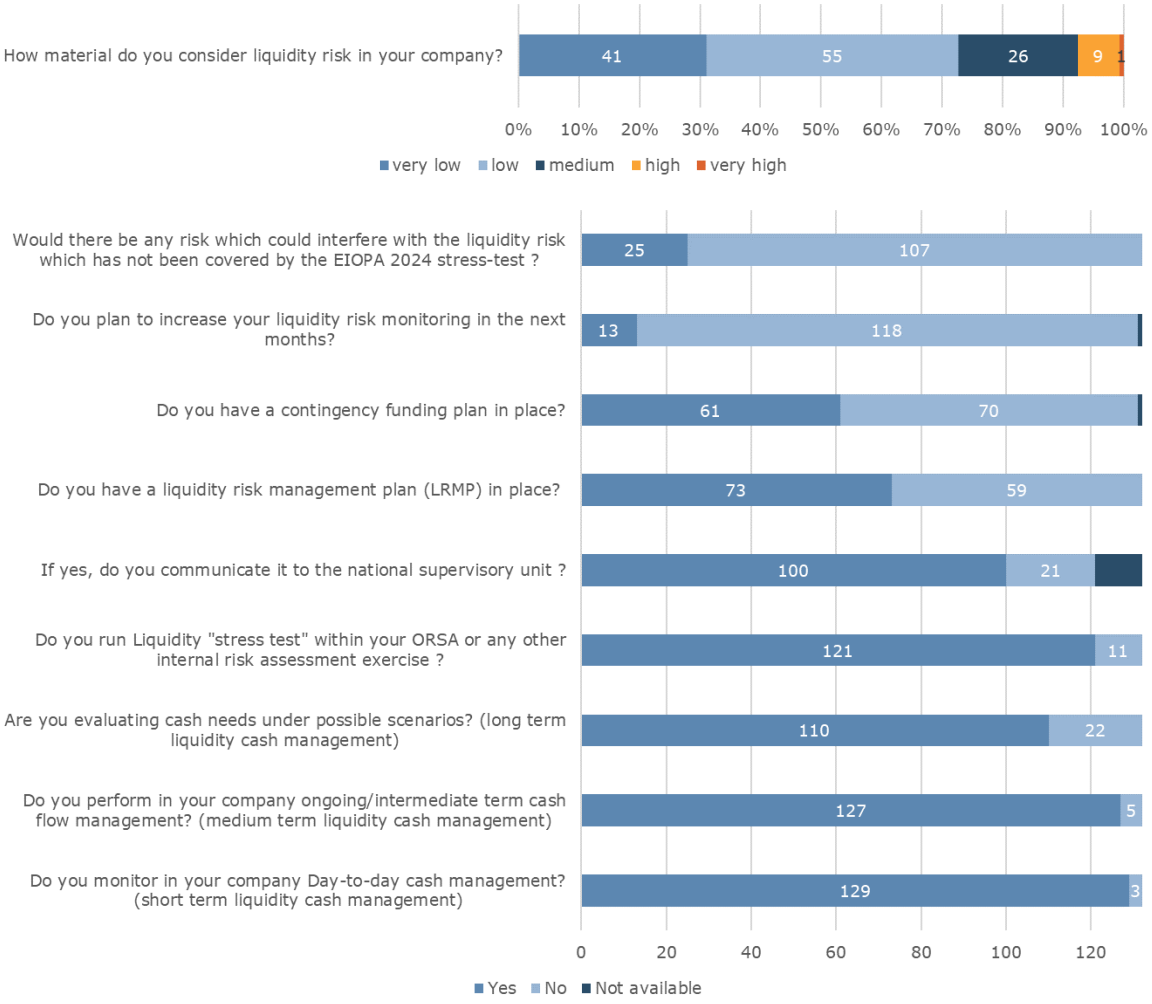
The results also show that the sector holds adequate liquid assets. The adverse scenario generated material liquidity needs, stemming mainly through the need to pay for surrenders. This resulted in insurers being effectively net seller of assets for EUR 206.7 bn under fixed balance sheet assumptions. The net sale increases to EUR 305.6 bn, when RMA are allowed, which is approximately 4.0% of the average quarterly bond trading volumes at EEA level.

4.2 NEXT STEPS

The 2024 stress test exercise represents a comprehensive assessment of the capital and liquidity position of European Insurers under a severe but plausible scenario, building on the numerous stress tests of the past. It provides, among others, a valuable basis for a follow-up dialogue between the group supervisors and the participating groups on the identified vulnerabilities. EIOPA will further analyse the results obtained in order to get a deeper understanding of the risks and vulnerabilities of the sector. Based on that, EIOPA will assess the need for issuing recommendations on the relevant issues identified during the exercise.

5 ANNEXES

5.1 QUALITATIVE QUESTIONNAIRE ON THE LIQUIDITY COMPONENT



EIOPA
Westhafen Tower, Westhafenplatz 1
60327 Frankfurt – Germany
Tel. + 49 69-951119-20
info@eiopa.europa.eu
https://www.eiopa.europa.eu