



IAIS

INTERNATIONAL ASSOCIATION OF
INSURANCE SUPERVISORS

Public

Development of Liquidity Metrics: Phase 2

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About the IAIS

The International Association of Insurance Supervisors (IAIS) is a voluntary membership organisation of insurance supervisors and regulators from more than 200 jurisdictions. The mission of the IAIS is to promote effective and globally consistent supervision of the insurance industry in order to develop and maintain fair, safe and stable insurance markets for the benefit and protection of policyholders and to contribute to global financial stability.

Established in 1994, the IAIS is the international standard setting body responsible for developing principles, standards and other supporting material for the supervision of the insurance sector and assisting in their implementation. The IAIS also provides a forum for Members to share their experiences and understanding of insurance supervision and insurance markets.

The IAIS coordinates its work with other international financial policymakers and associations of supervisors or regulators, and assists in shaping financial systems globally. In particular, the IAIS is a member of the Financial Stability Board (FSB), member of the Standards Advisory Council of the International Accounting Standards Board (IASB), and partner in the Access to Insurance Initiative (A2ii). In recognition of its collective expertise, the IAIS also is routinely called upon by the G20 leaders and other international standard setting bodies for input on insurance issues as well as on issues related to the regulation and supervision of the global financial sector.

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List of Abbreviations

| | |
|--------|--|
| ALM | Asset and Liability Management |
| ASF | Available Stable Funding |
| BCBS | Basel Committee on Banking Supervision |
| CDS | Credit Default Swaps |
| CET1 | Common Equity Tier 1 |
| CFLR | Cash Flow Liquidity Ratio |
| CIUs | Collective Investment Undertakings |
| CPA | Company Projection Approach |
| DGS | Deposit Guarantee Scheme |
| EA | Exposure Approach |
| ERM | Enterprise Risk Management |
| ETFs | Exchange-Traded Funds |
| FI | Financial Institution |
| FSB | Financial Stability Board |
| GDP | Gross Domestic Product |
| GICs | Guaranteed Interest Contracts |
| GME | Global Monitoring Exercise |
| GSE | Government Sponsored Entity |
| G-SIIs | Global Systemically Important Insurers |
| GWP | Gross Written Premium |
| HQLA | High Quality Liquid Assets |
| IIM | Individual Insurer Monitoring |
| ILR | Insurance Liquidity Ratio |

| | |
|-------|--|
| IOSCO | International Organization of Securities Commissions |
| ISIN | International Security Identification Number |
| LCR | Liquidity Coverage Ratio |
| LST | Liquidity Stress Test |
| M&A | Mergers and Acquisitions |
| MMFs | Money Market Funds |
| NSFR | Net Stable Funding Ratio |
| ORSA | Own Risk and Solvency Assessment |
| OTC | Over-The-Counter |
| P&C | Property and Casualty |
| PC | Public Consultation |
| PML | Probable Maximum Loss |
| PSE | Public Sector Entity |
| RSF | Required Stable Funding |
| SWM | Sector-Wide Monitoring |
| YE | Year-End |

1 Liquidity Metrics Project

1.1 Introduction and project objective

The IAIS adopted in November 2019 the Holistic Framework for the assessment and mitigation of systemic risk in the global insurance sector (Holistic Framework)¹ in order to support its mission of effective and globally consistent supervision of the insurance industry to protect policyholders and to contribute to global financial stability.

The key elements of the Holistic Framework are: (1) an enhanced set of supervisory measures for macroprudential purposes, (2) the IAIS Global Monitoring Exercise (GME) and (3) an assessment by the IAIS of the consistent implementation of enhanced ongoing supervisory policy measures and powers of intervention.

As part of the GME, the IAIS' risk assessment framework, the IAIS also monitors liquidity risk. Capturing liquidity risk in the insurance sector is a complex task due to the many dimensions to consider, such as the variability of insurance products and their liquidity profiles, different liquidity needs of various insurance business models (eg. reinsurers, life and non-life insurers), fungibility of assets, comparability across regions, choice of a time horizon and consideration of capital instruments. According to paragraph 58 of the GME document², the IAIS is developing liquidity metrics as an ancillary indicator in the context of the Individual Insurers Monitoring (IIM).

The liquidity metrics will serve as a tool to facilitate the IAIS' monitoring of the global insurance industry's liquidity risk and for the IAIS to assess insurers' liquidity exposure, which may be critical as insurers have been exposed to liquidity shortfalls in previous crises.³ The liquidity metrics highlight potential vulnerabilities, risk drivers and trends of insurers and the insurance sector. They are not intended to be a binding regulatory requirement, rather they are used as a monitoring tool to gather information that will help identify trends in insurer and insurance-sector liquidity.

The IAIS split the development of the liquidity metrics into two phases:

- During Phase 1 (2020-2021), the IAIS developed an Insurance Liquidity Ratio (ILR), which uses an exposure approach (EA); and
- During Phase 2 (2021-2022), the IAIS is further developing other liquidity metrics, including a company projection approach (CPA). The CPA approach utilizes insurers' projections of cash flows to assess liquidity risk. Moreover, Phase 2 also contains refinements to the EA, in particular to the ILR, and work on insurers' own liquidity metrics.

¹ <https://www.iaisweb.org/page/supervisory-material/financial-stability/file/87109/holistic-framework-for-systemic-risk>

² <https://www.iaisweb.org/page/supervisory-material/financial-stability/file/87206/global-monitoring-exercise>

³ See, eg., Das U, Davies N, Podpiera R (2003) Insurance and issues in financial soundness. IMF working paper 03/138.

In November 2020, the IAIS launched an interim public consultation on the “[Development of Liquidity Metrics: Phase 1 – Exposure Approach](#)”. The purpose was to consult specifically on the ILR using the EA, which the IAIS has developed as an ancillary indicator for the monitoring of liquidity risk. The 2021 consultation builds on the Phase 1 outcomes and comments received in the interim public consultation and consults on two approaches that the IAIS has developed to monitor liquidity risk:

- 1) CPA
- 2) EA including the ILR

In addition to those two approaches, the IAIS consults on aspects of insurers’ own liquidity metrics that are also a part of Phase 2. The IAIS plans to progress work further on the liquidity metrics project during 2022 through consideration of feedback collected in this public consultation, to finalise the metrics that will be used as an ancillary indicator for liquidity risk monitoring as part of the GME and to publish a document entitled “Liquidity metrics as an ancillary indicator”.

Question 1: Do you agree with the IAIS’ general objective and contemplated usage for the liquidity metrics? If not, please explain your rationale.

1.2 Phase 2: components and data sources

As previously described, during Phase 2 of the Liquidity Metrics Project, the IAIS is further developing other liquidity metrics. This includes but is not limited to the development of the CPA such as the Cash Flow Liquidity Ratio (CFLR). Also during Phase 2, the IAIS works on refinements of the EA, in particular – the Insurance Liquidity Ratio (ILR) that was presented in the public consultation in 2020. The IAIS had to postpone the IIM 2020 data collection as a consequence of the Covid-19 outbreak in 2020. In the absence of the IIM 2020 data collection, the IAIS could not conduct the planned ILR sensitivity analysis and to finalise of its calibration. The remaining work on the ILR is thus planned to be completed in Phase 2. Phase 2 consists of the following approaches/ metrics:

- CPA (section 2);
- Finalisation of the EA (section 3); and
- Other liquidity metrics (section 4).

The strengths and weaknesses of the three approaches are summarised in the table below:

Table 1 - Approaches to Measuring Liquidity Risk

| Exposure approach | | Company projection approach | | Other liquidity metrics | |
|--|---|--|---|---|---|
| Strengths | Weaknesses | Strengths | Weaknesses | Strengths | Weaknesses |
| <ul style="list-style-type: none"> • Better comparability • Simplicity • Less burden (many inputs already available) • Transparent | <ul style="list-style-type: none"> • Less risk sensitive • Loss of information on mismatches between liquidity needs and sources • Assumption on factors | <ul style="list-style-type: none"> • More risk sensitive • Additional information about timing mismatches between liquidity need and sources | <ul style="list-style-type: none"> • More complicated • Decreased comparability due to differences in assumptions across companies • Less transparent • More burdensome | <ul style="list-style-type: none"> • More risk sensitive • More suited to insurers operational, legal and regulatory set up | <ul style="list-style-type: none"> • Limited comparability • Dependent on insurers' parameters and accuracy |

Data sources

The liquidity metrics rely on data from the IIM data collection and are computed for each participating insurer on an enterprise-wide basis. The IAIS uses IIM data as there are no relevant liquidity related data currently available in:

- The IAIS Sector-wide Monitoring (SWM); and
- Public databases (including various types of paid subscriptions).

The IAIS' use of the liquidity metrics will focus as much on understanding trends and drivers of liquidity risk for insurers and the industry as well as the relative level of the liquidity metrics for an insurer and in the IIM Insurer Pool. Because of the limitations of different assumptions and approaches, the IAIS will develop multiple liquidity metrics for use in monitoring. Accordingly, the emphasis of the liquidity metrics is on monitoring of risk.

Question 2: Do you want to propose an additional liquidity metric in addition to three metrics mentioned in this section? If yes, please describe a proposed metrics.

Question 3: Do you know any public database with liquidity related data relevant for the development of liquidity metrics (either on a company level or on a jurisdictional level)?

1.3 Liquidity risk in insurance

Liquidity risk is the risk that an insurer is unable to realise its investments and other assets in a timely manner in order to meet its financial obligations, including collateral needs, as they

fall due.⁴ The nature of the traditional life and non-life insurance business models relies on premiums, income from investments and other sources of liquidity. Monitoring liquidity through liquidity risk management is important to ensure insurers' sound daily operations, protection of policyholders and financial stability. Liquidity risk would arise when there is:

- An imbalance between the insurer's liquidity sources and liquidity needs; and/or
- A long-term imbalance between the insurer's cash inflows and cash outflows.

Liquidity needs represent the insurers' payment obligations arising over shorter maturities of one year or less. The asset and liability management (ALM) strategy of an insurer expects the insurance companies to invest in or hold liquid assets (including cash) in order to meet the short-term payment obligations. Events and activities that may give rise to liquidity risk, potentially impacting the insurer's financial condition or credit rating, include derivatives trading, securities lending transactions, backing liquid liabilities with illiquid assets, exposure to insurable events such as catastrophe, policyholder behaviour, contingent or off-balance sheet exposures. Liquidity risk could arise if legal, regulatory and operational constraints limit the liquidity sources to be transferred within an insurance group.

A unique business model and sophisticated asset liability management allow insurers to keep low cash buffers and engage more in investment activities aimed at generating better returns for their policyholders. Notwithstanding, insurers do need to maintain adequate liquidity reserves (a difference between needs and sources) to fulfil expected and unexpected payment obligations and funding needs.

1.3.1 Transmission channel between insurers' liquidity and financial stability

In a stressed event, an insurer with low liquidity reserves may take remedial actions to manage the sudden liquidity needs. The remedial actions taken by insurers may amplify or accelerate stresses through the whole financial system and impact financial stability. In taking remedial actions, the main transmission channels identified by the IAIS for systemic risk include asset liquidation, exposure channels and critical functions.⁵ For the purpose of liquidity risk monitoring, we will only focus on asset liquidation and the exposure channels.

Non-traditional non-insurance (NTNI) activities, including off-balance sheet derivative transactions for non-hedging purposes, over-the-counter (OTC) transactions and/or leveraging assets to enhance investment returns, may give rise to liquidity risk and financial instability. The use of derivatives and margin trading may result in a stressed collateral requirement. If the insurer has insufficient liquidity to meet the collateral requirement, the insurer may take remedial actions to sell a substantial portion of its assets, causing stress on the financial markets through the asset liquidation transmission channel. For asset liquidation, the remedial actions by the insurer may be to accept sizeable haircuts on their assets to satisfy outflows which could aggravate the systemic impact. The sudden sale of assets on a large scale could affect financial stability as the reduction in the value of assets may disrupt trading or funding in financial markets, which may result in an illiquid or a less than liquid market. From

⁴ IAIS Glossary November 2019

⁵ Holistic Framework for Systemic Risk in the Insurance Sector November 2019

an exposure channel perspective, liquidity risk may be an exacerbating factor for when insurers lend out high quality securities to allow other firms to meet liquidity requirements. A liquidity need at the insurer level could force the insurer to recall loaned securities and transmit stress to counterparties who may no longer meet their own liquidity requirements.

1.3.2 Differences between banks and insurers in terms of liquidity risk

The core products of a commercial bank include loans, deposits and bonds. Deposits are most commonly the largest item on a bank's balance sheet from a liability side and can be withdrawn by bank customers at their request. Liquidity risk may arise when the reputation of banks is impacted, government announcements are made on shortage of available cash, and/or economic events such as negative interest rates on deposits which may result in bank runs by bank customers. Such a sudden increase in demand would cause a strain on the bank's liquidity sources as banks are leveraged and only hold a percentage of deposits received by bank customers. Unlike banks, insurance products are commonly designed for protection, including but not limited to savings, investments, life, property and liability protection. As highlighted above, policyholder behaviour through the normal course of business, including payment of claims in response to catastrophe events, the embedded guarantees⁶ and options, if included, in insurance contracts affecting both cash inflows and outflows may give rise to liquidity risk for insurers.

Other sources of liquidity risks may arise for insurers from the deterioration of a credit rating, poor asset and liability management strategies, aggressive investment and merger and acquisition (M&A) strategies, significant lapse events due to loss of public confidence, and political and legal issues.

Moreover, insurers that are internationally active or are a part of a financial or non-financial conglomerate may face additional liquidity problems. This may arise when an insurer, as part of a group, may be requested to make intra-group liquidity transfers, but faces jurisdictional, regulatory or legal restrictions on liquidity fungibility. If the group parent company is unable to overcome operational and regulatory constraints on the transferability and fungibility of liquidity sources, the affiliated entity in need may have concerns and face liquidity shortfall.

1.4 General and separate accounts

As developed by the IAIS and supported by stakeholders in the Public Consultation (PC) 2020, the main liquidity metrics developed by the IAIS should focus on an insurer's general accounts. Liquidity risk within separate accounts is borne by the policyholder, rather than the insurer. For the purposes of the IIM and the liquidity metrics (eg. the ILR or the CPA based metrics), separate accounts are defined as on-balance sheet assets whose investment performance is borne by policyholders or contract holders. Such assets are often reported as "segregated accounts", "unit-linked assets" or "separate accounts" but may not necessarily be captured within those classifications. Assets that back guarantees (eg. minimum guarantees of asset performance), when the risk is not borne by the policyholder, are not considered separate

⁶ Embedded guarantees offered by insurers may also reduce the liquidity risk as they can disincentivize policyholders to make early surrenders.

account assets themselves in the liquidity metrics or IIM. These assets are considered as general accounts. The IAIS may develop separate supplementary metrics for liquidity monitoring in a future period to capture any potential risk from these products. Be noted that the development of supplementary liquidity metrics for separate accounts will lead to an increase in the number of IIM data elements.

Question 4: Is there a need to develop supplementary liquidity metrics solely for separate accounts for both EA and CPA? If not, provide suggestions how the IAIS should monitor liquidity related to separate accounts (united-linked products) for both EA and CPA?

1.5 Fungibility

The IAIS currently uses an enterprise as a basis for the liquidity metrics calculation. It means that an insurance company is considered as one enterprise with unlimited fungibility of liquidity sources and needs. This approach is based on an assumption that liquidity sources in one jurisdiction may be utilised in another jurisdiction, in case of liquidity need (ie. no ring-fencing applies). The enterprise approach brings lots of advantages, eg. simplicity and lower reporting burden.

As mentioned by stakeholders in the PC 2020, the assumption of unlimited group fungibility might often not be realistic. Many insurers manage liquidity considering the different liquidity needs of operational entities within a group with the recognition that liquidity is not entirely fungible across the group, especially in time of crisis, since there may be extreme scenarios where intra-group support is not fully available. The IAIS is aware of this caveat. The fungibility issue may be resolved by more granular reporting done on a level of fungible liquidity pools.

The fungible liquidity pools are parts of an enterprise with unlimited fungibility of liquidity sources and needs. Liquidity sources can move with no restrictions⁷ within a pool. In a perfectly fungible company, there will be just one fungible pool, the enterprise. For other companies, with more decentralised liquidity management, there may be multiple fungible liquidity pools depending on their own assessment of jurisdictional, legal, regulatory or geographical restrictions. Be noted that a change from the enterprise basis approach to fungible liquidity pools approach would lead to an increase in the number of IIM data elements to report.

⁷ Or non-material restrictions.

Table 2 - Fungibility assumption – Options

| (Perfectly fungible) Enterprise as a basis | | Fungible liquidity pools as a basis | |
|---|--|---|--|
| Strengths | Weaknesses | Strengths | Weaknesses |
| <ul style="list-style-type: none"> • Simplicity • Less data elements needed | <ul style="list-style-type: none"> • Stronger assumption on fungibility of liquidity • Does not capture insurers liquidity management and risks if fungibility is not perfect. | <ul style="list-style-type: none"> • More risk sensitive • Fungibility considered with all cross-jurisdictional limitations | <ul style="list-style-type: none"> • More burdensome as more data elements are required • Harder aggregation of pools' results |

Question 5: Do you prefer to collect data and calculate liquidity metrics using fungible liquidity pools approach instead of the current enterprise approach for both EA and CPA? If yes, please provide ideas on approaches to the group-wide aggregation of results.

Question 6: Does the current enterprise approach lead to significant shortcomings of the liquidity monitoring? If yes, describe these shortcomings and limitations.

1.6 Consideration of capital

The traditional insurance business model exposes insurers to various direct and indirect risks from both the asset and liability side. For the insurance business, some of the risks are direct and comparatively easy to quantify such as market risk whereby losses can be quantified by a fall of interest rate sensitive assets due to changed yield curves or from insurance risk such as claim payments from a catastrophe event. For most of the direct risks, insurers manage their capital to safeguard against any unforeseen adverse events, however, the IAIS recognises that other (indirect) risks, such as strategic risk, reputational risk or liquidity risk are less readily quantifiable.⁸

Regarding liquidity risk, holding additional capital may not be the most appropriate risk mitigation technique and it may be more appropriate for the supervisor to require the insurer to control these risks via exposure limits and/or qualitative requirements such as policies, systems and controls to monitor and manage their liquidity risk. Although it may be difficult for an insurer to quantify all risks, it is important that insurers address their material risks as a part of their own risk and solvency assessment (ORSA) or equivalent internal assessments.⁹

Insurers are exposed to liquidity risk indirectly from both the asset and liability side. Compared to banks there are important differences. Insurers' liabilities have to be estimated based on past experience, they have in general longer maturities, which, however, can be matched with assets of the same maturity. Insurers are less vulnerable to customer runs. The most common event that would give rise to liquidity risk for life insurers is the risk of simultaneous withdrawals

⁸ ICP 17 Capital Adequacy

⁹ ICP 16 Enterprise Risk Management for Solvency Purposes

or policy surrenders by policyholders in the event of negative publicity of an insurer or growing concern on an insurer's financial condition. For non-life insurers, liquidity risk may arise in response to an extraordinary natural catastrophe, leading to large claims payments that will need to be settled over a short period of time. On the asset side of liquidity risks, insurers face the risk of impaired liquidity in stressed capital markets. When previously liquid asset classes become illiquid, raising liquid funds such as cash can be difficult and may require insurers to sell their most liquid assets. Insurers can also face liquidity risks from leveraged positions (derivatives trading) from holding large amounts of credit default swaps (CDS) on positions which are at risk from rating downgrade of the insurer. This would require the insurer to post higher collateral in the event of a rating downgrade. An example of liquidity problems experienced by an insurance group from their CDS positions is that of the American International Group (AIG), a US-based insurance group, who experienced significant losses on credit default swaps. These losses and the deteriorating outlook for AIG led to a rating downgrade in September 2008 that forced the group to post collateral payments on derivatives trades. AIG was unable to raise enough capital to satisfy the demands for collateral, resulting in the group requiring government support.

The assessment of liquidity risk and analysing the interplay of liquidity with the solvency position remains important for an insurer. The solvency ratio indicates the ability of an insurer to meet their liabilities in the long run. The solvency ratio of an insurer would be sensitive to the movement in their assets and liabilities and movements in assets and liabilities may have an indirect impact to the insurers' liquidity position. Examples of key drivers that would reduce an insurer's solvency ratio which may impact the insurers' liquidity on the asset side can include low interest rates, sudden increases in interest rates, rating downgrades on bonds, widening of credit spreads and equity market volatility. From the liabilities side, the solvency ratios may be impacted by declining interest rates (liability discount rates), underwritten policies with minimum guarantees in declining markets, or insurance risks in terms of catastrophe modelling and under reserving.

One limitation of the solvency ratio is that it does not capture the liquidity profile of the insurer, which, in an adverse scenario could cause an insurer to incur problems to meet short-term payment obligations. When considering a scenario where a catastrophic event occurs which also coincides with a capital market distress, insurance companies could be constrained both on the asset and liability side. In such a scenario, insurers may be forced to make a distressed sale of their most liquid assets in order to meet the short-term liability obligations. The scenario assumes that the most liquid assets sold by the insurer had positively contributed towards their solvency ratio. By selling the most liquid assets, the insurer's solvency ratio would be indirectly impacted. Furthermore, the vulnerability of the insurer would be compounded if the asset portfolio comprised of more illiquid assets which had contributed towards the insurer at least meeting its regulatory requirements prior to a stress event. Another impact that liquidity may have on the solvency ratio is when the insurer holds largely liquid assets in the form of high quality sovereign bonds with low yields. Such investments may lower the liquidity risk but would also lower the solvency position of the insurer from the impact in regard to investment income. The impact could be further increased if the insurer has issued minimum guarantee products. When considering the quality of its assets it is important for insurers, to meet short-

term obligations in both normal and stressed scenarios, and to also consider the correlating effects between managing their solvency ratio and their liquidity.

Insurance companies have traditionally held a large portion of their assets in sovereign bond investments. However, a low interest rate environment in most developed markets has led insurers to diversify investment portfolio into alternative investments or other higher yield instruments such as corporate bonds.¹⁰ The changing preference to corporate bonds primarily impacts life insurance companies as the low yields have brought much focus on the differences between assets and liabilities. Notwithstanding, in a low interest rate environment, insurers continue to hold solvency ratios of more than the regulatory requirements. In the 2007-08 financial crisis,¹¹ even banks with strong capital positions faced liquidity problems. As such, the focus on the quality of capital assets remains important even for insurers to manage their liquidity. Due to this, it is prudent for insurers to consider capital in their liquidity monitoring strategy.

The CPA considers the cash inflows and outflows associated with transactions related to their business activity, including capital activities, for liquidity monitoring. The EA, which primarily focuses on the exposures to the balance sheet, calculates the Insurance Liquidity Ratio and does not include capital instruments in its PC 2020 version.

The CPA (explained further in section 2) considers the cash inflows and outflows arising from the following categories:

- Operating activities;
- Investing activities; and
- Financing activities (including capital flows)

The CPA captures the potential vulnerabilities of the insurer's activities that could give rise to liquidity risk by assessing the net cash flows, ie. insurer's cash inflows and outflows. The key cash inflow and outflow transactions related to capital comprise of the following:

Inflows from:

- Capital contributions;
- Commitments;
- Dividends from subsidiaries; and
- Others (eg. from demergers, etc.)

Out flows comprising:

- Shareholder dividends;

¹⁰ Impact_of_Covid-19_on_the_global_insurance_sector_(Q4_2020).pdf (presentation made at the 5th June 2021, MPC meeting)

¹¹ Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools (bcbs238.pdf)

- Policyholder profit participations;
- Capital contributions to subsidiaries; and
- Others (eg. for M&A activities, etc.).

The EA (as explained further in section 3), as designed in the Phase 1, calculates the ILR without considering capital related transactions and instruments. Under this approach, the ILR is determined by considering the insurer's assets and liabilities. The ILR represents a ratio of the sources of liquidity (assets) against the liquidity needs (liabilities) weighted by factors (haircuts) assigned to the different items on the balance sheet. The factors assigned to the different items on the balance sheet are based on the characteristics of the financial instruments. The IAIS has proposed two different methods to capture the capital instruments in the ILR: the simplified method and the detailed method.

The simplified method is similar to the CPA whereby the CFLR is computed by adjusting the calculation for liquidity needs while keeping the liquidity sources calculation unchanged. The liquidity needs adjustment is available from the IIM data collection template using rows 38.7a and 38.7b (capital paid and received). A factor of 100% is applied under the simplified method. The simplified method considers the movements of capital and dividends of an insurer but may not clearly capture the relationship between liquidity and capital in the ILR. Volatility of the data rows used will need to be evaluated over time. The liquidity needs adjustment is calculated as follows:

- Liquidity Needs adjustment = (Capital paid – Capital received + Dividends paid) * 100%
 - Capital received (Row 38.7a)
 - Capital paid (Row 38.7b)
 - Shareholder dividends paid (a new row in the IIM 2022)

The detailed method for inclusion of capital instruments into the ILR calculation would require more data elements to be collected in the IIM data collection. More detailed data on capital instruments (eg. CET1, Tier 1 and Tier 2 etc.) and income statement (eg. dividend payments, holdings of retained earnings, etc.) would be collected and combined with calibrated factors. These additional data elements would adjust the liquidity sources and needs under the EA. Currently, no granular information on capital resources and income statement is captured under the IIM data collection. Furthermore, the method will need to account for changes to the value of capital resources under normal and stress situations.

Question 7: Do you agree with the proposal to include capital instruments in the CPA and EA metrics calculations as described in this section? If not, please provide rationale and alternative suggestions.

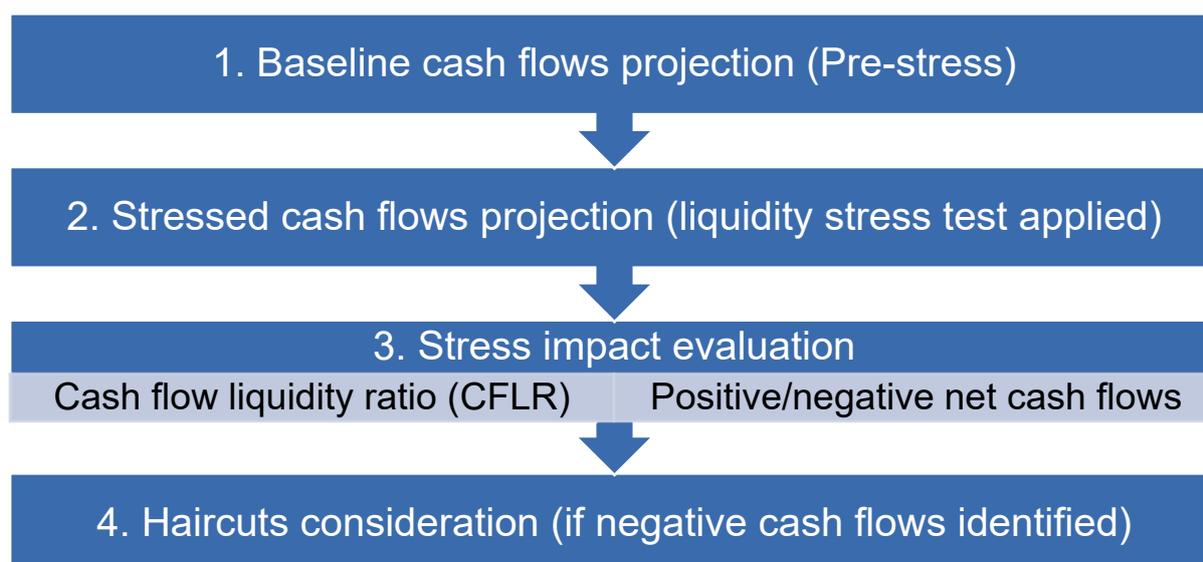
Question 8: Do you prefer the detailed method for inclusion of capital instruments in the ILR calculation as described in this section? If not, please provide rationale.

2 Company Projection Approach

2.1 Objective and description

The IAIS received comments from observers in the PC 2020 that supported the development of alternative liquidity metrics to the insurance liquidity ratio (ILR), such as a cash flow company projection approach. The ILR is a balance sheet EA that compares liquidity sources to liquidity needs to derive the insurance liquidity ratio. The ILR is described in the chapter 3 of this document. In comparison to the ILR, the CPA compares cash inflows and outflows that are derived from the cash flow statements. In case of life insurers, for example, the ILR ratio is calculated by applying a haircut to the asset amount over the surrender value of insurance policies. If the surrender of insurance policies is higher than the available liquid assets then the ratio is below 100%, which basically means the insurer fails the liquidity stress test. Conversely, when the ratio is well in excess of 100%, the insurer is doing well with respect to liquidity. In contrast, the CPA subtracts cash outflows from inflows, then applies a liquidity stress test to that net cash flow position. If there is an initial shortfall, or cash flow deficit, then the CPA determines how to apply a haircut on the available liquid assets that could be sold to cover that deficit.

Figure 1 – Company projection approach in 4 steps



The CPA analyses liquidity sources and needs over various time horizons under a baseline assumption and under a stressed scenario (called a liquidity stress test). The liquidity stress

test would be performed at the holding company level, consistent with the consolidated reporting of the IIM. The scope of the IIM is limited to insurers fulfilling the criteria for inclusion in the Insurer Pool. The CPA would not only monitor liquidity from insurance operations, but also from banking and asset management businesses if those entities would have a material impact on the holding company's liquidity. The CPA would apply a stress test to the consolidated cash flow statement to evaluate the group's liquidity. Consequently, banking and asset management operations that are material would be captured, following liquidity monitoring approaches developed by both the BCBS and IOSCO that are appropriate for that business model.

If insurers engage in bank-like activities with a material impact on the liquidity of the holding company, the BCBS LCR may be appropriate for those mixed insurance-banking entities.¹²

Moreover, historical cash flows are collected to provide the retrospective CPA view and to validate the baseline projections. Historical cash flows were already collected in the IIM 2021 data collection.

Question 9: Do you agree with the above described CPA to calculate the baseline cash flow projection, to apply the liquidity stress test and then to evaluate its impact and potential application of haircuts on assets? If not, please explain and provide suggestions.

Question 10: Do you agree with the proposal to perform the CPA at the holding company level? If not, please explain and provide suggestions.

2.2 Categories of cash flows considered in the CPA and haircut application

The CPA is anchored by the consolidated cash flow statement that is divided into three sections: operating, investing and financing. Cash flows are classified in these sections based on the nature of the transaction. Each section measures the gross amount, equalling essentially total cash inflows, and the net amount, equalling total cash inflows less cash outflows. Keeping each section separate allows for the monitoring of each component of the cash flow statement as opposed to only looking at total cash inflows less total cash outflows. Here is a brief description of each section and what it is intended to measure:

Operating Cash Flow

Gross operating cash flow (a sum of all operating cash inflows) includes gross premiums written (direct and assumed), re-insurance recoveries and income tax received. Operating

¹² To improve internationally active banks' short-term resilience to liquidity shocks, the BCBS introduced the LCR as part of the Basel III post-crisis reforms. Historically, banks have failed quickly resulting in liquidation making the BCBS LCR appropriate for banking. In the case of a bank, a bank deposit is a liability that can be withdrawn simultaneously by customers with no prior notice which historically has happened when concerns of a bank's solvency arose. The LCR is designed to ensure that banks hold a sufficient reserve of high-quality liquid assets to allow them to survive a period of significant liquidity stress lasting 30 days. If insurers engage in asset management activities with a material impact on the liquidity of the holding company, IOSCO's liquidity enhancement recommendations, which were endorsed by the FSB, would be followed.

cash flows (a difference between operating cash inflows and outflows) for life, non-life insurers and re-insurers, are often positive¹³ because insurers collect premiums but do not immediately have to pay claims (since this is dependent on the insured event actually happening). Even if the insured event happens, this would most likely not disrupt the insurer's liquidity position because of the low correlation among insured events in a large and well diversified insurance portfolio. In other words, it is unlikely that all the insured events occur at the same time, triggering simultaneous claim requests. Thus, the insurer pays the claim but still collects premiums from other policyholders when the insured event has not happened. It is important to note that for both life and non-life insurance business, there are several circumstances under which the operating cash flows will not be positive:

- Non-life business characterised by poor(er) underwriting results (combined ratio > 100%) or in case of one or more natural catastrophes.
- Life business in runoff, or more general, characterised by decreasing business volumes (low premium income combined with higher outflows which can be caused by both surrenders and/or contract maturities).

Depending on the policy, there is also a natural delay in payment after the loss event, especially with respect to reinsurance. To calculate net operating cash flow, gross cash flow is subtracted by various operation cash outflows, such as total expenses, income tax paid, reinsurance payables and premiums ceded. Net operating cash flow is also generally positive, depending on the nature of the pooled insurance risks. A detailed list of considered cash inflows and outflows is provided in Annex 2.

Investing Cash Flow

The investing section of the cash flow statement includes not only sale and purchase of investments, principal and interest that is either received or paid, dividend and distributions that is either received or paid, but also collateral positions for securities lending, repurchase agreements and derivatives. During the 2008 financial crisis, the collateral cash call on securities lending, repurchase agreements, and derivatives was a key driver of liquidity stress for firms such as AIG. In a stressed environment, a trading position that triggers collateral calls due to either a ratings downgrade or fluctuations of the value of investments can create a cash flow deficit in the investing section. In addition, liquidity risk could arise from fixed and indexed annuities as well as funding agreements and guaranteed interest contracts (GICs). Synthetic GICs expose the insurer to collateral risk from derivatives. Finally, policy loans can expose insurers to liquidity risk because policy loans may be more attractive to policyholders than surrenders. Surrendering a life policy may be unattractive because the replacement of coverage may be less certain due to pricing and required health checks, tax payments due, and penalties imposed by the insurer. In sum, when applying a stress scenario to the investing section, there could be a negative cash flow position. A detailed list of considered cash inflows and outflows is provided in Annex 2.

Financing Cash Flow

The financing section of the cash flow statement includes issuance or retirement of debt and other funding liabilities as well as capital received and paid. During the 2008 financial crisis,

¹³ Valid for one year and not considering the run-off of the prior year(s).

the commercial paper market froze, which created liquidity risk for some large companies, but insurers relied more on long-term debt given the nature of their business model of matching long-term assets with liabilities. Moreover, insurers often are a stabilizing force because of their ability to generate cash from premiums without having to raise funding from capital markets. A detailed list of considered cash inflows and outflows is provided in Annex 2.

Haircuts application

By adding operating, investing and financing cash flows, a net cash position can be established that is likely to be positive. Then a stress scenario is applied for three chosen time horizons as described in the Tables 3 and 4: 1 month, 3 months and 12 months to the net cash flows. The economic variables applied will result in three different stressed cash flows with any assumptions to be detailed in the IIM Explanatory Statement. If the stressed cash flow is still positive, then the insurer would not be required to complete an estimate of assets available for sale. If the stressed cash flow is negative, then the IAIS focuses on the assets that would be immediately available for sale to meet the cash flow deficit.

The assets to cure the cash flow deficit will use haircuts established by the ILR as described in the section 3.2.4 (Factors for liquidity sources). By using the existing ILR Liquidity Sources and their factors, there will be a substantial reduction in the reporting burden and, at the same time, it will allow for a flexible approach that takes into consideration various insurer business models.

Question 11: Are there any other categories of cash inflows or outflows that should be added that were not captured by the cash flow statement, such as asset management activities?

Question 12: Do you agree with using haircuts from the ILR for assets to be applied if there is a cash flow deficit? If not, provide your explanation and suggestions.

Question 13: Do you prefer to collect and analyse only high-level cash flow projections, ie. aggregate cash inflows and outflows of the three categories mentioned above? If yes, provide your clarification.

Question 14: Do you prefer to collect and analyse the underlying cash inflows and outflows as listed in Annex 2? Note that this option provides more accuracy at the cost of a higher reporting burden. If yes, explain your reasoning.

Question 15: Do you have any suggestions for changes or additions to the inflows and outflows as listed in Annex 2?

2.3 Main types of cash outflows

Surrender values and contract maturities for life insurance

Surrender values refer to the value of life insurance and annuity liabilities or similar savings products, written as liabilities for insurance licensed entities, that can be surrendered or transferred as cash to an unaffiliated insurer upon the request of policyholders. The value of the surrender is the amount that the insurer is required to pay (total “cash out”) as a result of the policyholder’s request, regardless of whether or not the full payment is remitted directly to

the policyholder. Also regular life insurance contracts generate cash outflows when they mature as payments are made to policyholders.

Natural/man-made catastrophes

Catastrophes can be divided into two categories: natural and man-made. A catastrophe is an event when a large number of policyholders file claims at the same time. Common examples of catastrophe events include earthquakes, tornadoes, floods, or acts of terrorism. Catastrophes may trigger material cash outflows especially for non-life and composite insurers and reinsurance companies.

Fixed and indexed annuities

Fixed and indexed annuities provide a minimum return to investors, which can expose the insurer to liquidity risk when the fair value of the assets at surrender is lower than the value of the product guarantee, which would require additional cash to make up the difference.

Derivatives

Derivatives vary widely by type and are used for different purposes. A key liquidity risk pertaining to derivatives is the requirement of posting of daily cash collateral if the fair value of derivatives change or they are impacted by other circumstances, such as a credit rating downgrade. In a derivative transaction, one counterparty is typically hedging, while the other is providing hedging in exchange for some yield on risks, such as a change in interest rates or foreign exchange rates, fluctuation in equity prices, and bond default in the form of swaps, futures, forwards or options. Liquidity risk is present in hedging and non-hedging derivatives. For example, hedging with derivatives for the macroeconomic exposure of variable annuities exposes insurers to liquidity risk in a scenario where fair value changes require the posting of additional collateral.

Securities Lending

Securities lending transactions involve a counterparty providing a loan of equity stock holdings in exchange for cash collateral. The counterparty can return the equity stock holdings and demand its cash back the same day. Some firms have opted to re-invest the cash collateral for yield enhancement. Liquidity risk arises when the value of the re-invested collateral is lower than the cash demanded, leading to a shortfall, which was a cause of AIG's liquidity stress during the financial crisis.

Repurchase Agreements

Repurchase Agreements (Repos) are similar to Securities Lending Agreements except that the instrument used in the transaction is typically fixed income security or bond based rather than equity based. Liquidity risk in repos involves the fact that the transaction is essentially a short-term loan that is callable, which could be problematic when the value of collateral is lower, resulting in a shortfall. This was the case with Lehman Brothers during the financial crisis.

Borrowed Money that includes commercial paper

Commercial paper is short-term borrowing with maturities of less than a year. Besides unexpected cash demands, liquidity risk can arise if the firm is unable to roll-over its commercial paper in order to meet its cash needs, especially during times of stress.

Funding agreements and GICs

Funding agreements typically involve a life insurer's annuity payment in exchange for cash, which has the potential to cause a liquidity crunch depending on the nature of the transaction. For example, General American sold funding agreements with put options that allowed the purchasers to demand repayment of principal and interest in a seven-day period with no penalty (a book value withdrawal), which led to that insurer's insolvency.

GICs can expose insurers to liquidity risk when the fair value of the assets at surrender is lower than the guarantee provided, which would require additional cash to make up the difference. In the case of synthetic GICs, a specific type of derivative, there is additional liquidity risk related to the posting of collateral.

Policy Loans

Policyholders may choose to take out a loan against their policy rather than surrender it. The liquidity impact would depend on how much the insurer may be required to lend.

Question 16: Do you agree with the proposed main types of cash outflows as specified in this section? If not, please provide clarification and suggestions for other outflows that should be considered.

2.4 Liquidity Stress Test for Insurers

The liquidity stress test (LST) is applied to all three categories of cash flows regardless of the fact that both the operating and financing cash flows are assumed to be more stable during a financial crisis or a period of stress. The stress test applied to the investing section covers a decline in broad asset categories such as returns on government bonds, structured finance securities and corporate bonds as well as equities, as measured by a decline in main equity indices. In addition, there is a number of macroeconomic variables such as inflation, unemployment, GDP growth, disposable income growth, mortgages rates and real estate price indices that are more applicable to stress the financing and operating section as declines by asset category are already specified for the investing section. Applying macroeconomic factors to the financing section should diminish the commercial paper market and raise the cost of capital funding for insurers, whereas the impact on the operating section may involve lower sales such as corporate owned life insurance when there is higher unemployment.

The time horizons for the liquidity stress test are 30 days, 90 days and 1-year, since insurance liabilities are generally long-term with insurance products used primarily to protect against certain risk, unlike bank and asset management products that can be used for short-term liquidity. However, some insurance products can be utilised by policyholders to meet short-term cash flow needs and are thus associated with higher liquidity risk. Some of these key

products include: policy loans, fixed and index annuities, and GICs. The baseline (pre-stress) cash flow assumption is the net cash flow under normal operating conditions, which is liquidity sources less needs. A positive net cash flow is presumed because insurers are not expected to be operating with a net cash flow deficiency. See Annex 4.

Question 17: Do you agree with the three proposed time horizons (30 days, 90 days and 1-year) for the CPA? If not, please explain and provide your suggestions.

Question 18: Do you think the investing section of the cash flow statement should be stressed in the LST? Would you add or subtract certain investing cash inflows or outflows as listed in Annex 2?

Question 19: Do you think the operating section of the cash flow statement should be stressed in the LST? Would you add or subtract certain operating cash inflows or outflows as listed in Annex 2?

Question 20: Do you think the financing section of the cash flow statement should be stressed in the LST? Would you add or subtract certain financing cash inflows or outflows as listed in Annex 2?

The primary goal of this liquidity stress testing, and the specific stress scenarios utilised, is for macroprudential uses – to allow supervisors and the IAIS to identify amounts of asset sales by insurers that could impact markets under stressed environments. Thus, the selected stress scenarios are consciously focused on industry-wide stresses – those that can impact many insurers at around the same time. As a result, the design of the scenarios may not reflect the most stressed condition for some legal entity insurers, or even their groups. Regulators have indicated that liquidity stress testing is also meant to assist regulators in their microprudential supervision responsibilities by informing on the liquidity risk of legal entities and insurance groups.

The following stress scenario is to be considered for the CPA in Phase 2: **Adverse liquidity stress scenario**.¹⁴ The adverse liquidity stress scenario is characterized by weakening economic activity, deflation and increasing unemployment rates across all economies. This economic downturn is accompanied by a global aversion to long-term fixed-income assets that, despite lower short-term rates, brings about a near-term rise in long-term rates and steepening yield curves.¹⁵ In addition, the scenario counts with equity prices decline by roughly 40% and material increase in market volatility. The adverse liquidity stress scenario may cover also stress on insurance liabilities. The adverse liquidity stress scenario includes the following adverse GDP, market related and other parameters:

Table 3 - CPA: Adverse GDP parameters for LST

| GDP parameters for LST (%) | Adverse: 1 Month | Adverse: 3 Months | Adverse: 12 Months |
|----------------------------|------------------|-------------------|--------------------|
| Real GDP Growth | -1.5 | -1.5 | -1.5 |

¹⁴ An example of the prescribed assumptions may be found in the Federal Reserve Board’s 2017 Supervisory Scenarios for Annual Stress Tests required under the Dodd-Frank Act Stress Testing Rules and Capital Rule. See Annex 4 for more details.

¹⁵ NAIC 2020 Liquidity Stress Test Framework, pages 18-20

| | | | |
|---|-----|-----|------|
| Nominal GDP Growth | 0.9 | 0.9 | 0.5 |
| Real Disposable Income Growth | 0.7 | 0.7 | -0.5 |
| Nominal Disposable Income Growth | 2.4 | 2.4 | 1.2 |

Table 4 - CPA: Adverse market and other parameters for LST

| Market parameters for LST (changes in %) | Adverse: 1 Month | Adverse: 3 Month | Adverse: 12 Month |
|--|---|-------------------------|--------------------------|
| Unemployment rate | 0.2 | 0.5 | 2.1 |
| Consumer Price Index Inflation Rate | -0.5 | -1.6 | -1.6 |
| 3 Month Sovereign/Treasury Yield | -0.1 | -0.3 | -0.3 |
| 3 Year Sovereign/Treasury Yield | 0.0 | -0.1 | 0.0 |
| 5 Year Sovereign/Treasury Yield | 0.0 | 0.0 | 0.2 |
| 7 Year Sovereign/Treasury Yield | 0.0 | 0.0 | 0.2 |
| 10 Year Sovereign/Treasury Yield | 0.0 | 0.1 | 0.3 |
| BBB Corporate Yield | 0.5 | 1.5 | 2.1 |
| Agency Mortgage Backed Securities 10 Year Yield | 0.0 | 0.1 | 1.1 |
| Non-Agency Mortgage Backed Securities 10 Year Yield | 0.3 | 0.9 | 4.1 |
| Commercial Mortgage Backed Securities 10 Year AA Yield | 0.3 | 0.9 | 4.2 |
| CLOs & CDOs 5.5 - 7 Year Yield | 0.2 | 0.7 | 3.4 |
| Asset-Backed Securities-Cards 5 Year Yield | 0.2 | 0.6 | 2.7 |
| Asset-Backed Securities-Auto Near Prime 3 Year AAA Yield | 0.1 | 0.2 | 1.7 |
| Mortgage Rate | 0.3 | 0.8 | 1.3 |
| Prime Rate | -0.1 | -0.2 | -0.3 |
| Industrial equity index (eg. Dow Jones Industrial Average) | -10 | -31 | -40 |
| House Price Index | -0.4 | -1.1 | -5.5 |
| Commercial Real Estate Price Index | -0.3 | -1.0 | -9.2 |
| Market Volatility Index (VIX) | 4.9 | 14.6 | 9.5 |
| Adverse parameters for cash outflows related to insurance liabilities | Adverse: 1 Month | Adverse: 3 Month | Adverse: 12 Month |
| Surrender values for life insurance | To-be-decided as a part of the IIM 2022 | | |
| Natural/man-made catastrophes | To-be-decided as a part of the IIM 2022 | | |
| Underwriting and reserving | To-be-decided as a part of the IIM 2022 | | |
| Operational and cyber risk | To-be-decided as a part of the IIM 2022 | | |

Question 21: Do you agree with the selected adverse liquidity stress scenario? If not, provide clarification.

Question 22: Do you want to propose a different liquidity stress scenario? If yes, provide its detailed parameters.

Question 23: Do you agree with the proposed adverse GDP and market parameters? If not, provide clarification and suggestions.

Question 24: Do you agree that CPA adverse scenario should contain adverse parameters related to insurance liabilities? If yes, do you have any suggestions for adverse parameters for cash outflows related to insurance liabilities?

Question 25: Do you want to add other variables and parameters into the adverse liquidity stress scenario? If yes, provide suggestions.

Question 26: Do you prefer to have several targeted stressed scenarios/projections (in comparison to the currently proposed one combined adverse scenario)?

Question 27: Do you believe the selected adverse liquidity scenario is relevant to the countries you operate in? If not, what would be the relevant stresses for the countries you operate in?

2.5 Limitations and benefits

Benefits of CPA

The CPA is designed to reflect the different business model of insurers. For example, the CPA takes into account the considerable cash flows generated by insurance premiums – even in the case of a significant insured loss – which is a reflection of the insurance business model that has allowed most insurance failures to be resolved in an orderly run-off compared to a liquidation that is common in the banking sector. A run-off is a failure scenario that allows claims to be paid, although not all at once, because premiums are collected and the business reduced. The inability to pay claims is rare. Insurance liabilities are also fundamentally different to bank liabilities due to the disincentives for policyholders to run (ie. surrender). As mentioned previously, this is a reflection of the uncertainty surrounding policyholders to find affordable replacement of coverage. The insurers also typically design its withdrawable products to include contract features that allow the right to delay the processing of withdrawals and surrenders for up to 30 days, which further mitigates the short-term liquidity impact of surrenders. Consequently, the CPA takes into account the positive cash flows from premiums and investments without having to immediately pay claims.

Limitations of CPA

The CPA historical cash flows should be easily validated because the data is mostly publicly available across jurisdictions. However, comparability may be more difficult for the stressed cash flows. Not all insurers will be able to apply exactly all requested parameters of the LST. If the IAIS collects just high-level cash flows for all three categories, the data validation (and

thus also the comparability) may become less feasible. More granular data collected for the CPA may eliminate this limitation, but it may also lead to an increase of the IIM data call.

The CPA should address a similar liquidity crisis that AIG experienced from its securities lending inside its insurance operations along with substantial CDS exposure from banking operations during the 2008 financial crisis. The cause of AIG's liquidity crisis was a credit rating downgrade by Moody's that triggered cash collateral calls from CDS and securities lending counterparty agreements. However, asset management activities may not be fully captured in the cash flow statement. The CPA will capture banking and insurance cash flows well, but any counterparty exposures related to asset management operations may be off-balance sheet and thus harder to capture on a consolidated basis. If those asset management activities have a material liquidity impact on the holding company through consolidated trading of all operations in one legal entity, but are not fully captured by the cash flow statement and a qualitative approach may be needed to capture them, especially if the trading involves financial instruments that have clauses that exempt them from bankruptcy proceedings, which would make resolution more difficult.

Question 28: Do you agree with the summary of benefits and limitations of the CPA? If not, please provide some clarification.

3 Finalisation of the Exposure Approach

During Phase 1, the IAIS developed the first version of the Insurance Liquidity Ratio (ILR), which used an EA and can be calculated using PC 2020 weights/factors. In Phase 2, the IAIS implemented the feedback received during the interim PC 2020 and updated the EA methodology and calculation of the ILR. The updated ILR, described as the ILR 2021, is further described in the following sections with emphasis on the main changes since 2020. The EA applies factors to balance sheet items and to off-balance sheet exposures to measure liquidity risk.

In the EA, the IAIS leverages current and prior work on systemic risk assessment to develop the ILR. The IAIS' previously published assessment work included measurements of certain insurers' biggest potential liquidity needs, including the use of short-term funding and potential withdrawals from insurance contracts.

3.1 The Insurance Liquidity Ratio

The ILR is the ratio of an insurer's liquidity sources and needs over a selected time horizon of an assumed liquidity stress:

$$\text{Insurance Liquidity Ratio (ILR)} = \frac{\text{Liquidity Sources}}{\text{Liquidity Needs}}$$

When determining the parameters (ie. factors and balance sheet instruments) of the ILR, especially with regards to liquidity sources, the IAIS looked at a number of sources including the approaches of insurance supervisors, rating agencies and bank supervisors. For the treatment of assets, the IAIS relied most heavily on bank regulations. While insurers are less exposed to liquidity shortfalls than banks, both sectors invest in certain similar asset classes. Considering the experience of the banking sector regarding liquidity regulation and its interlinkages with the insurance sector, its liquidity risk practice is worth following on these common issues.

For liquidity needs, the ILR would primarily leverage prior IAIS work on systemic risk identification. Due to the enhanced liquidity needs of banks relative to insurers, bank supervisors have developed a range of tools over the last decade to assess and regulate liquidity risk. The IAIS utilizes lessons learned from these tools, especially for non-insurance liquidity needs.

3.1.1 Consideration of various business models in liquidity metrics

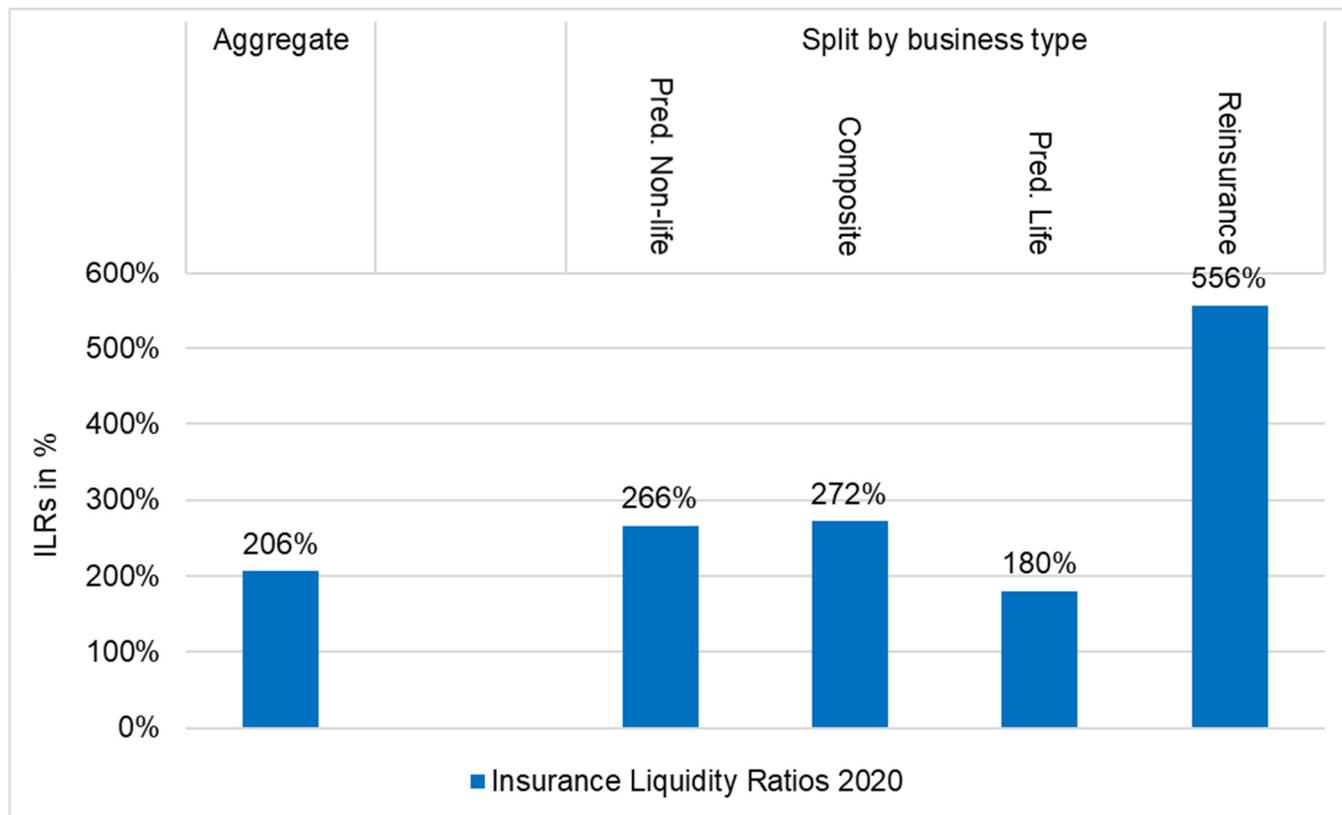
Acknowledging the comments received for the PC 2020, with regards to the EA and ILR, the IAIS proposes to consider differences in liquidity profiles of life insurers, non-life insurers and reinsurers, mainly in terms of ILR liquidity needs. ILR liquidity needs are a consequence of a specific business model. Each business model is exposed to various liquidity shortfalls and demands, for example:

- Non-life insurers (P&C companies) are mostly exposed to:
 - natural and other types of catastrophes and, therefore, often rely on reinsurance. This source of liquidity risk is the failure of their reinsurer to pay on time (or at all) according to non-life insurers' needs, because of a delay on the side of the reinsurer or a wrong expectation on the side of the cedent; and
 - negative developments of their pricing (combined ratio – ie. premiums are underestimated) and reserving (their reserves are insufficient to cover the claims).
- Life insurers are mostly exposed to:
 - mass lapse events, when liabilities assumed to be due in the far future have to be suddenly settled; and
 - negative developments of their asset investments and derivative operations.
- Reinsurance companies are mostly exposed to natural and other types of catastrophes, but usually with a small time lag.

The ILR results using the PC 2020 weights and balance sheet items can be seen in the following chart. The results, in combination with the PC 2020 feedback, questioned the responsiveness of the ILR to various business models, especially for reinsurers¹⁶.

¹⁶ In the GIMAR 2020 or 2021, reinsurers are included within the other three categories based on their most suitable affiliation. The IAIS created a special segment for reinsurers in the PCD in order to properly address their comments and specific liquidity profiles. The other three categories are, however, fully comparable and reinsurers are included in them where applicable (mainly composites and non-life insurers).

Figure 2 - ILRs per business model using PC 2020 factors (YE20)



Source: IIM 2021 data collection

Phase 2 data analysis shows that the ILR differences are driven primarily by liquidity needs that needed to be further recalibrated (see the section 3.3 for more details). Liquidity sources composition was comparable across all four types of business models.

In contrast, the CPA focuses on raw cashflows, regardless of their linkage to various business or liquidity profiles. The IAIS does not currently plan to consider specifically various business models in the CPA metrics.

Question 29: Do you agree with the consideration of differences in liquidity profiles of life insurers, non-life insurers and reinsurers in the ILR liquidity needs factors? If not, please explain and provide your suggestions.

3.1.2 Time horizons

Based on the comments received for the PC 2020, the IAIS considers two time horizons in the EA to prudently monitor short-term and longer-term liquidity risks:

- 1-year time horizon (the main time horizon)
- 3-month time horizon (the supplementary time horizon)

The IAIS chose a 1-year stress horizon as the main time horizon. While this is longer than the horizon used by some analysts and certain regulatory requirements in other sectors (eg. the BCBS' Liquidity Coverage Ratio with 30 days), insurers are relatively less vulnerable to liquidity stresses, which resolve over shorter horizons. Some of the largest drivers of insurers' liquidity needs, such as policyholder surrenders and catastrophe payments, would result in cash flows that are spread over months or years, instead of hours or days.

In addition to the main time horizon, acknowledging stakeholders' comments in 2020, the IAIS decided to test also the supplementary 3-month time horizon focusing on short-term liquidity risk. The 3-month time horizon may provide better information regarding immediate liquidity needs and sources with limited impact of capital related operations. As mentioned by some stakeholders, in the case of liquidity distress, the 1-year time horizon is sufficiently long for many insurance companies to take more complex actions (eg. to demerge, to sell a part of their business to peers in exchange for required liquidity or to emit new shares to investors). In comparison, the 3-month time horizon limits the number of available tools. Moreover, as mentioned by stakeholders, the 3-month time horizon may better suit the circumstances of non-life insurers (whereas the 1-year time horizon fits the situation of life insurers). Both time horizons in combination provide a more precise picture of companies' liquidity situations.

The EA methodology is based on balance sheet items. The supplementary 3-month time horizon may benefit from this as only a few additional data elements need to be collected. The differentiation between time horizons is thus reflected in their different factors. The proposed factors (in this document) for the 3-month time horizon will be further refined in 2022.

Question 30: Do you agree with the use of two time horizons for the EA: 1-year and 3-month time horizons? If not, please explain and provide your suggestions.

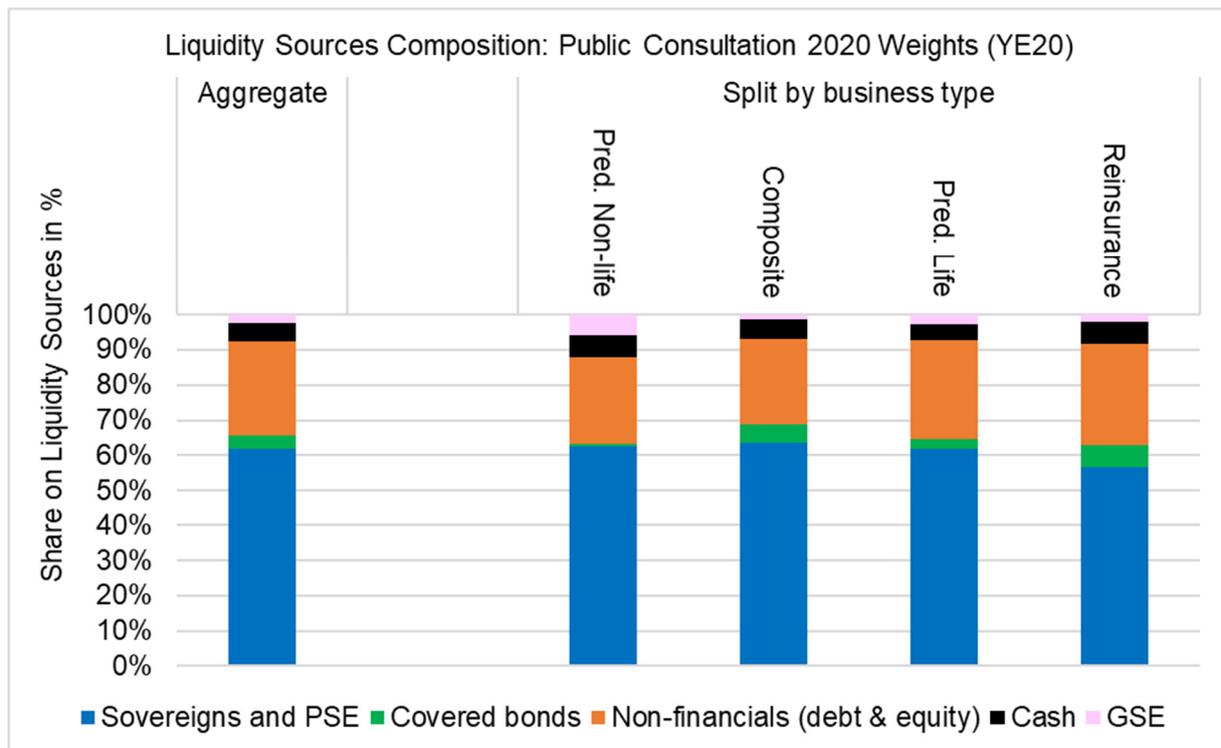
Question 31: Do you prefer to calculate 3-month time horizon similarly to the BCBS' LCR, ie. 3-month ILR liquidity sources (as defined in the Table 5) will be divided by net 3-month cash outflows (a difference between cash outflows and inflows from all operating, financing and funding activities as defined in the Chapter 2)? If not provide your comments.

3.2 Liquidity sources

3.2.1 Categories of liquidity sources

The insurers' liquidity sources are a key input in the calculation of the ILR. This section identifies significant categories of liquidity sources considered in the ILR design. The chart below shows materiality (after applying the factors/weights) of various categories of liquidity sources using the ILR methodology and weights as described in the PC document 2020.

Figure 3 - ILR Liquidity sources per business model using PCD 2020 factors



Source: IIM 2021 data collection

Cash (approximately 5% of ILR 2020 liquidity sources)

The cash category includes cash and cash equivalents. It is considered the most liquid category of ILR liquidity sources and covers all holdings of cash, including cash and currency on hand, demand deposits with banks or other financial institutions, or other kinds of accounts that have the general characteristics of demand deposits. Central bank reserves can be included only if they can be withdrawn in a time of stress. The cash category does not include any instruments with restricted withdrawal or usage.

Sovereign debt including PSE and GSE (approximately 65% of ILR 2020 liquidity sources)

This category includes all sovereign counterparty exposure with rating AAA, AA, A and BBB or equivalent, from at least one external rating agency, on an immediate risk basis, held either outright or through participation in publicly traded collective investment vehicles. Sovereign debt includes bonds issued by public authorities (central governments, supra-national government institutions, regional governments, municipalities or local authorities) and bonds that are fully, unconditionally and irrevocably guaranteed by a Member State's central government and central bank (denominated and funded in the domestic currency of that central government and central bank, multilateral development or supranational organisations like the Bank for International Settlements, International Monetary Fund, European Central Bank, European Union). BBB-like sovereign debt instruments are proposed for inclusion in the

ILR liquidity sources to cover the whole investment grade (comparable to corporate bonds or PSE investments).

GSE securities senior to preferred shares refer to mortgage-backed securities issued by or unconditionally guaranteed by a government sponsored entity (GSE). Such securities must have an explicit guarantee such as to the timely payment of principal and interest from the GSE. Included securities must be “liquid”, which is defined as those whose market price or the market haircut demanded on secured transactions collateralised by the security or equivalent securities has not changed by more than 10% during a 30 calendar-day period of significant stress. Only GSE’s with rating AAA, AA, A and BBB or equivalent, from at least one external rating agency, are considered liquidity sources.

Public sector entity (PSE) debt instruments refer to all holdings of liquid investment-grade debt securities of public sector entities with a rating AAA, AA, A or BBB. Public sector entities include national and multilateral development banks, but do not include state-owned commercial banks. In some cases, the difference between state-owned/state-sponsored PSEs and commercial banks may not be clear. A bank that serves a narrow purpose to benefit the public good (increase home ownership, promote development of rural infrastructure) should be classified as a PSE, whereas a bank that may focus on some of these same activities, but has a wider ability to conduct banking activities, should be considered a commercial bank. Government agencies and governments below the sovereign level that issue or guarantee securities or that provide loans, should not be considered financial institutions.

Corporate debt and equity instruments (including covered bonds and non-financials account for approximately 30% of ILR 2020 liquidity sources).

Corporate debt securities include only plain-vanilla assets whose value is readily available, based on standard methods, and does not depend on private knowledge (ie. excluding structured products or subordinated debt). “Liquid” is defined as those securities whose market price or the market haircut demanded on secured transactions collateralised by the security or equivalent securities has not changed by more than 20% during a 30 calendar-day period of significant stress. Only corporate debt securities with rating AAA, AA, A and BBB or equivalent, from at least one external rating agency, are considered liquidity sources.

Covered bonds are bonds issued by a bank or mortgage institution and are subject by law to special public supervision that is designed to protect bondholders. Proceeds deriving from the issue of these bonds must be invested in conformity with the law on assets which, during the whole period of the validity of the bonds, are capable of covering claims attached to the bonds and which, in the event of the failure of the issuer, would be used on a priority basis for the reimbursement of the principal and payment of the accrued interest. Such securities may not be issued by any affiliate or subsidiary of the insurer. Only covered bonds with rating AAA, AA, A and BBB or equivalent, from at least one external rating agency are considered liquidity sources.

Common equities include all holdings of publicly traded common equity, issued by a non-financial sector entity. Such securities must be included in a major index and must be a reliable

source of liquidity (ie. the market price or the market haircut demanded on secured transactions collateralised by the security or equivalent securities has not changed by more than 40% during a 30 calendar-day period of significant stress¹⁷).

Other liquidity sources

Other liquidity sources include selected liquid investment funds, financials, certificates of deposit, undrawn committed lines (total committed amount less the drawn portion of all committed credit facilities obtained from third parties) and premiums. Investment funds and exposures to financials are described in separate sections.

Certificates of deposit cover all certificates of deposit with a maturity of less than a year or withdrawal penalty of less than 10%, even if they are not issued as a receipt (ie. certificates of deposit with an International Security Identification Number (ISIN)).

Premiums are equal to total value of future net premium that were earned in the last three to 12 months. Net earned premiums include direct and assumed business received from policyholders less any premium payments paid to reinsurers on ceded business.

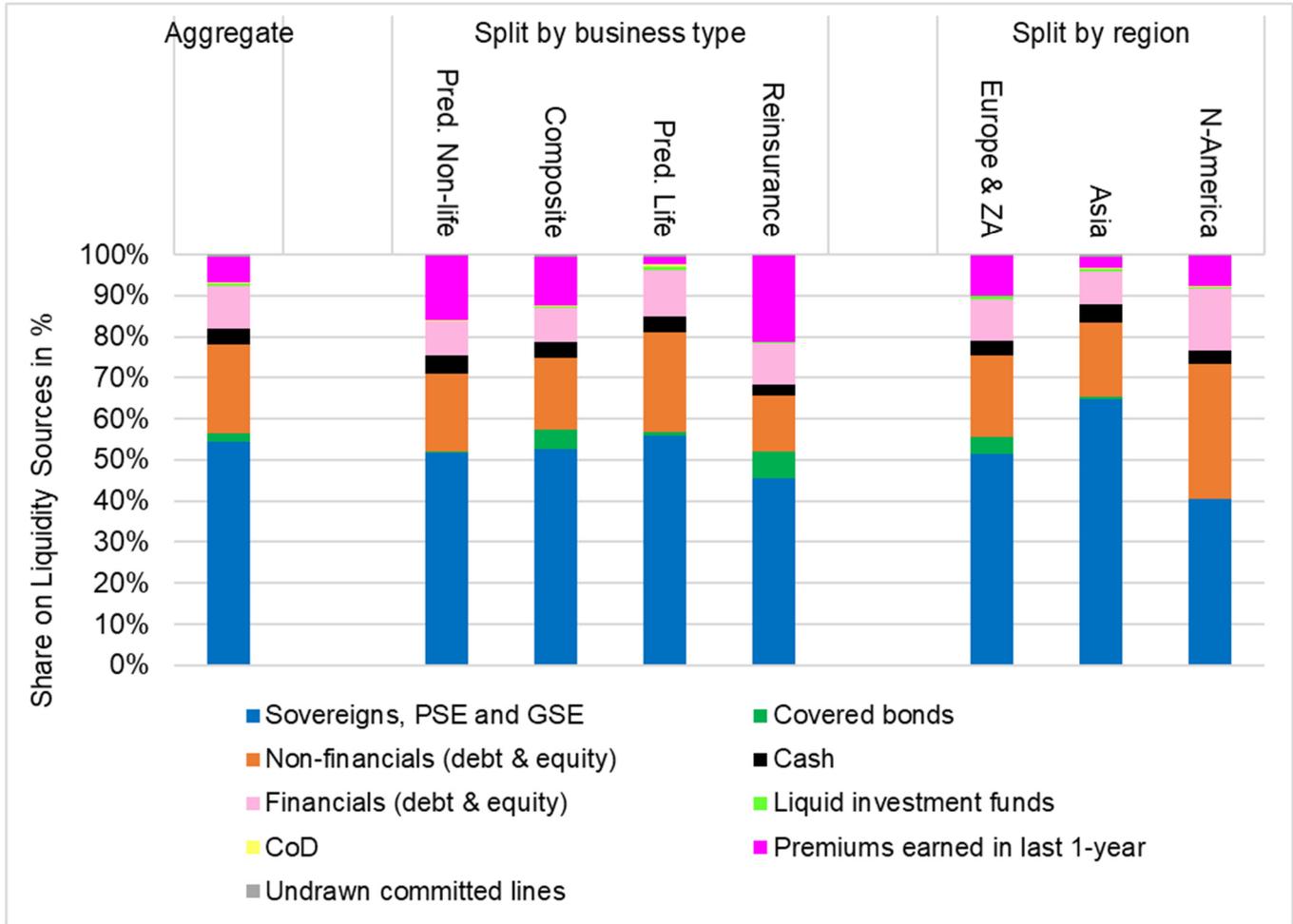
3.2.2 Exposures to financials

In the PC 2020, most stakeholders suggested to consider debt & equity instruments issued by financial institutions (financials) as ILR liquidity sources. This inclusion would be in line with the BCBS' LCR approach that considers exposures to both financial and non-financial counterparties.

As planned, the IAIS assessed the impact of instruments issued by financial institutions on the ILR liquidity sources (its share on total ILR liquidity sources). Based on the YE 2020 data, debt & equity instruments issued by financials would account for a non-negligible part (approximately 10%) of total liquidity sources. Their full exclusion was therefore extremely conservative for the ILR calculation, as mentioned also by many stakeholders in the PC 2020. Hence, the IAIS suggests including these exposures that are issued by financial institutions into the liquidity sources. The chart below plots the results of the sensitivity analysis showing material impact of financials and negligible impact of inclusion of certificates of deposits (CoD) and undrawn committed lines (off-balance sheet liquidity).

¹⁷ Period of significant stress will be further explained in the IIM 2022 Technical Specifications.

Figure 4 - ILR Liquidity sources per business model using PCD 2021 factors



Source: IIM 2021 data collection

A financial institution (FI) is a company engaged in the business of dealing with financial and monetary transactions such as deposits, loans, investments and currency exchange. Financial institutions encompass a broad range of business operations within the financial services sector including banks, trust companies, insurance companies, brokerage firms and investment dealers. Typically, financial institutions include banks (and other deposit-taking institutions, excluding central banks and other public sector bodies), securities dealers, other capital markets business, insurance companies, reinsurance companies, mutual funds, other asset management business, hedge funds and pension funds.¹⁸

As a first step, the IAIS proposes to associate to these financials the same factors/weights as were given to their non-financials counterparts as we assume that their liquidity profile is similar to that of non-financials. These weights will then be expected to be a part of an

¹⁸ Example of regional segmentation - NACE codes (Europe): Banks: K64.1.9; Insurers/Reinsurers/Pensions: K65; Other financials: K66 and K64 excluding K64.1.9

upcoming sensitivity analysis in 2022. Therefore, we suggest the following rows/data elements to be considered for inclusion into liquidity sources:

- Highest quality corporate debt securities issued by financials;
- Investment grade corporate debt securities issued by financials; and
- Liquidity common equity securities issued by financials.

All these data elements were already collected in the IIM 2021 data collection.

Question 32: Do you agree with the proposed approach to financials? If not, please explain and provide your suggestions.

3.2.3 *Exposures to investment funds*

Most investments in investment funds did not qualify as a liquidity source in the ILR 2020 calculation. The IAIS rationale was that liquidity of investment funds could differ significantly from the underlying investments, particularly during times of market stress or distress at a fund's sponsor. Moreover, even certain funds regarded as being among the most liquid experienced outflows that required intervention by central banks. However, based on the comments received for the PC 2020, and the fact that the BCBS includes some liquid funds in its liquidity metrics, the IAIS reconsidered its position and decided to include a part of the most liquid investment funds into the ILR and liquidity monitoring. Liquid parts of mutual, money market funds and exchange-traded funds (ETFs) are included in the liquidity sources with factors lower than would be factors for common equities. An investment fund is a supply of capital belonging to numerous investors used to collectively purchase securities while each investor retains ownership and control of their own shares. An investment fund provides a broader selection of investment opportunities, greater management expertise and lower investment fees than investors might be able to obtain on their own. The purpose of investment funds is gathering investors' capital and investing that capital collectively through a portfolio of financial instruments such as stocks, bonds and other securities. With investment funds, individual investors do not make decisions about how a fund's assets should be invested. They simply choose a fund based on its goals, risk, fees and other factors. A fund manager oversees the fund and decides which securities it should hold, in what quantities and when the securities should be bought and sold within a fund-specific mandate.

Types of investment funds typically include:

- Mutual funds;
- Exchange-traded funds;
- Money market funds; and
- Hedge funds.

Investment funds reflect the liquidity of the underlying asset and can be liquidity sources, depending on which type of liquidity need they are provisioned as a source for. Assets that can be easily sold are considered "liquid". Therefore, for each abovementioned type of fund, we investigated to see if they ensure that liquidity can be relied upon by investors in times of liquidity stress (ie. assess if they can be terminated at any time, typically by surrender/redemption and, hence, can be categorized as liquidity sources, providing liquidity

even during a crisis). Some investment funds are very quickly impacted by stress events. It therefore appears necessary to exclude them or give them lower factors. Thus, IIM volunteers will be required, if they want to include their investment fund exposures in the ILR calculation, to report liquid and less liquid splits for the four abovementioned types of investment funds. A liquid investment fund is a fund that is traded at the liquid and active market every working day and has not changed by more than 40% during a 30 calendar-day period of significant stress.

The IAIS considers a majority of mutual funds and money market funds (MMFs) as liquid. A mutual fund is an open-end¹⁹ professionally managed investment fund that pools money from many investors to purchase securities. Despite the existence of fees and expenses, the advantages of mutual funds compared to direct investing in individual securities include not only economies of scale, diversification and professional management but also daily liquidity. A MMF (also called a money market mutual fund) is an open-ended mutual fund that invests in short-term debt securities such as US Treasury bills and commercial paper. MMFs are managed with the goal of maintaining a highly stable asset value through liquid investments, while paying income to investors in the form of dividends. MMFs are important providers of liquidity for financial intermediaries. They seek to limit exposure to losses due to credit, market and liquidity risks. Money market securities must be highly liquid and of the highest quality.

The IAIS also considers that a majority of ETFs are liquid with slightly lower liquidity than mutual or MMFs. ETFs emerged as an alternative to mutual funds for traders who wanted more flexibility with their investment funds. Similar to closed-end funds, ETFs trade on exchanges and are priced and available for trading throughout the business day. Many mutual funds have ETF counterparts. ETFs frequently have the additional advantage of slightly lower expense ratios than their mutual fund equal. In fact, ETFs combine characteristics of both closed-end funds and open-end funds, as they are structured as open-end investment companies. ETFs are traded throughout the day on a stock exchange. An arbitrage mechanism is used to keep the trading price close to the net asset value of the ETF holdings.

Hedge funds are considered less liquid than the previous three types of investment funds as they cannot be sold to the general public. A hedge fund is a pooled investment fund that trades in relatively liquid assets and is able to make extensive use of more complex trading, portfolio-

¹⁹ Open-end vs. closed-end funds

- Open-end funds are **flexible** investment funds in regard to the capital invested. It can increase or decrease according to the exported units that represent the percentage of the investors' contribution in the fund. Investors can get back the amount they invested whenever they want. In other words, an open-end fund is equitably divided into shares that vary in price in direct proportion to the variation in value of the fund's net asset value. Each time money is invested, new shares or units are created to match the prevailing share price; each time shares are redeemed, the assets sold match the prevailing share price. In this way, there is no supply or demand created for shares and they remain a direct reflection of the underlying assets. The majority of investment fund assets belong to open-end mutual funds.
- On the other hand, in closed-end funds, the investor's capital (number of shares or units issued in an initial public offering (or IPO) or through private placement) is **fixed** and the number of its units never changes. The outcome of the fund is not achieved by redemption but by selling the units to another investor (They trade on an exchange. The price that investors receive for their shares may be significantly different from net asset value (NAV); it may be at a "premium" to NAV (i.e., higher than NAV) or, more commonly, at a "discount" to NAV (i.e., lower than NAV)) or by the expiration of the fund's period.

construction and risk management techniques in an attempt to improve performance, such as short selling, leverage and derivatives. Financial regulators generally restrict hedge fund marketing to institutional investors, high net worth individuals and others who are considered sufficiently sophisticated. Hedge funds are considered alternative investments. Their ability to use leverage and more complex investment techniques distinguishes them from regulated investment funds available to the retail market (such as mutual funds and ETFs). They are also considered distinct from private-equity funds and other similar closed-end funds, as hedge funds generally invest in relatively liquid assets and are usually open-ended. This means that they allow investors to invest and withdraw capital periodically, based on the fund's net asset value, whereas private-equity funds generally invest in illiquid assets and only return capital after a number of years. Based on that, the IAIS does not consider including hedge funds into the ILR liquidity sources.

Question 33: Do you agree with the proposed approach to investment funds? If not, please explain and provide your suggestions.

3.2.4 Factors for liquidity sources

The following table represents liquidity sources considered in the ILR calibration. Some sources of liquidity have valuations that may fluctuate and/or may be depressed in times of need. Therefore, the current market value, or fair value, may not be realised in times of stress. To account for this situation, a haircut is applied to the current value of certain liquidity sources. Haircuts/factors for liquidity sources reflect both the ability to sell assets within a particular timeframe and any fall in asset price that may occur before the asset can be liquidated. For example, the 80% factor for high quality sovereigns implies a 20% haircut in the 1-year time horizon. Therefore only 80% of the current value of high quality bonds is considered available for the purposes of calculating the ILR (1-year time horizon). The table below also shows the corresponding factors after taking the appropriate haircut for each liquidity source. Green colour highlights the newly considered liquidity sources.

Table 5 - ILR Liquidity Sources – Factors 2021

| Factors 3-month time horizon | Factors 1-year time horizon | Liquidity Sources | Rows |
|-------------------------------------|------------------------------------|--|-----------------|
| 100% | 100% | Cash | 9.4.a |
| 95% | 100% | Sovereigns rated AA- and above | 9.5.1 |
| 90% | 100% | Sovereigns in local currency | 9.5.2 |
| 75% | 85% | Sovereigns rated A- and above | 9.5.3 |
| 60% | 70% | Sovereigns rated BBB- and above | 9.5.3.BBB |
| 75% | 85% | GSE securities senior to preferred shares rated above A- | 9.5.7a & 9.5.7b |

| | | | |
|-----|-----|--|---------------------|
| 50% | 70% | Investment-grade covered bonds | 9.5.4 |
| 60% | 70% | Investment-grade public sector entity debt | 9.5.8 |
| 50% | 70% | Non-financials: Investment-grade corporate debt securities | 9.5.5 |
| 40% | 50% | Non-financials: Common equity | 9.5.6 |
| 50% | 70% | Financials: Investment-grade corporate debt securities | 9.5.5.F |
| 40% | 50% | Financials: Common equity | 9.5.6.F |
| 40% | 50% | Certificates of Deposit | 9.5.9 |
| 10% | 15% | Undrawn committed lines | 11.1 |
| 15% | 20% | Investment funds: Liquid mutual and MMFs | 9.10.1.L & 9.10.2.L |
| 10% | 15% | Investment funds: Liquid ETFs | 9.10.3.L |
| 20% | 85% | Non-life net earned premiums in the last year | 61.2.N |

The “Rows” column refers to the IIM data collection data rows. Please refer to the IIM Technical Specifications in Annex 3 for a description of each of the above listed liquidity sources.

Factors for both tested time horizons are provided. The shorter 3-month time horizon includes slightly lower factors (and thus higher haircuts) for some liquidity sources, reflecting the shorter time available for liquidation of these liquidity sources (without incurring material losses) and also the higher sensitivity of asset prices to sudden market movements (that would normally recover in the longer run) in comparison to the longer 1-year time horizon.

Because of the lack of academic work on measuring the liquidity of different asset classes, the IAIS largely calibrated the factors applied to different liquidity sources, using supervisory judgment and an examination of the approaches of others. Below is a summary table of liquidity sources and their factors from different regimes/institutions. In the case of the Net Stable Funding Ratio (NSFR), the displayed factor is one minus the appropriate Required Stable Funding (RSF) factor. Instances where these approaches use significantly differing definitions of asset classes are captured in the footnote. The table does not summarise the treatment of assets that are not included within the ILR.

Table 6 - Asset Factors from Other Approaches

| | BCBS | | S&P (US and Can. Life) ²⁰ | | S&P (Global) ²¹ | AM Best ²² | |
|--|-------------------------|--------------------|--|--------|-------------------------------|-----------------------|-----------|
| | LCR ²³ | NSFR ²⁴ | 1 month | 1 year | | Short-Term | Long-Term |
| Cash | 100% | 100% | 100% | 100% | 99% ²⁵ | 100% | 100% |
| Highest Quality Sovereign Debt | 100% | 95% | 100% ²⁶ | 100% | 90% | 100% | 100% |
| Sovereign Debt in Local Currency | 100% | 95% | 96/98% | 100% | 90% | N/A ²⁷ | N/A |
| High Quality Sovereign Debt | 85% | 85% | 96/98% | 100% | 90% | N/A | N/A |
| Highest Quality Covered Bonds | 85% | 85% | 96/98% | 100% | 90% | 60/75% ²⁸ | 70/90% |
| Highest and High Quality GSE Securities | 0/85/100% ²⁹ | 0/85/100% | 90% ³⁰ | 90% | 90% | 90% | 95% |
| Investment-Grade Corporate Bonds | 50/85% ³¹ | 50/85% | 96/98% ³² | 100% | 90% | 75% | 90% |
| Investment-Grade Public Sector Entity Debt | 85/100% | 85/100% | 90% | 90% | 90% | 0% ³³ | 0% |

²⁰ Standard and Poor's Ratings Services, Life: Liquidity Model for U.S. and Canadian Life Insurers (2004). S&P recently superseded this criteria with more general criteria for rating insurers. Their newer criteria lack details on the treatment of different asset classes.

²¹ Standard and Poor's Ratings Services, Insurers: Rating Methodology (2013). S&P recently superseded this criteria with more general criteria for rating insurers. Their newer criteria lack details on the treatment of different asset classes.

²² A.M. Best's, AM Best's Stress Liquidity Ratio for US Life Insurers, available at <http://www3.ambest.com/ambv/ratingmethodology/OpenPDF.aspx?rc=197655>

²³ BCBS, Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools (2013), available at <https://www.bis.org/publ/bcbs238.pdf>

²⁴ BCBS, Basel III: the net stable funding ratio (2014), available at <https://www.bis.org/bcbs/publ/d295.pdf>.

²⁵ S&P assessed a 1% haircut on deposits with banks rated BBB- and higher. A 5% haircut was applied to banks rated BB or B.

²⁶ S&P's U.S. includes a 100% factor for U.S. government securities.

²⁷ Because the AM Best methodology is for the U.S., only factors applicable to U.S. Government Securities are specified. A.M. Best only prescribes factors for U.S. obligations.

²⁸ A.M. Best does not include a covered bond asset class. Investment-grade corporate bonds not issued in private offerings or by affiliates receive a 75% factor in the short-term scenario and 90% in the long-term scenario. Other Loan-Backed and Structured Securities receive a factor of 60% in the short-term scenario and 70% in the long-term scenario.

²⁹ The BCBS LCR and NSFR treat Public Sector Entities (PSEs) as equivalent to the sovereign. PSE is not precisely defined. Many, but not all entities considered as Government-Sponsored Entities, could be classified as PSEs under the BCBS rules.

³⁰ S&P applies a 90% factor to agency pass-through mortgage-backed securities. No general treatment of GSEs is specified.

³¹ The BCBS differentiates between highest quality corporate bonds, which have ratings of AA- or higher and receive a factor of 85%, and high-quality bonds, which have ratings of BBB- or higher and receive a factor of 50%. The BCBS also excludes corporate bonds issued by financial institutions.

³² S&P uses a 98% factor for public bonds rated A- and above. Other investment-grade public bonds receive a 96% factor.

³³ Public-sector debt is not included in AM Best's classification of liquid assets.

| | | | | | | | |
|--------------------------|-------|-------|-----|-----|-----|-------|-------|
| Liquid Common Equity | 50% | 50% | 70% | 85% | 50% | 70% | 70% |
| Investment funds or CIUs | 0-70% | 0-70% | N/A | N/A | N/A | 0-70% | 0-70% |

No adjustment is made for the quality of diversification of funding sources. Supervisors may note poor diversification of funding sources in the firms' internal liquidity risk management.

Encumbered assets arising from repurchase agreements, securities lending, or derivatives transactions are eligible for inclusion as ILR liquidity sources. This is consistent with the measurement of these liquidity needs on a gross basis.³⁴ For example, the amount borrowed in securities lending transactions would be included as a liquidity need for the insurer, but the assets used to collateralise this borrowing would be counted as liquidity sources. Conversely, off-balance sheet collateral received in securities borrowing or reverse repurchase (resale) agreements should not be included as a liquidity source. The ILR would include 90% of assets in securities financing transactions as a liquidity source. Insurers are assumed to not roll over these transactions during a time of liquidity stress.

Based on the comments received in the PC 2020, the IAIS considers including non-life premiums in the calculation of liquidity sources. As mentioned by stakeholders in the interim consultation, non-life premiums are a source of liquidity for insurers and the assumed combined ratio, equal to 100%, was too conservative. Premiums are often used to satisfy certain business-as-usual liquidity needs, including expected claims and general and administrative expenses. Including premiums as a liquidity source requires including these and other items as liquidity needs. In 2022, based on the IIM 2022 data analysis as an outcome of Phase 2, the IAIS will reconsider the inclusion of non-life premiums, claims and expenses in the ILR design – whether the additional accuracy of risk measurement from including these additional liquidity needs and sources would offset the potential added complexity.

³⁴ For example, see the treatment of derivatives in section 3.3.3.2 and treatment of securities lending transactions in section 0.

Question 34: Do you agree with the proposed factors for sovereign/PSE/GSE debt instruments? If not, please explain and provide your suggestions.

Question 35: Do you agree with the proposed factors for non-financial corporate debt instruments (including covered bonds)? If not, please explain and provide your suggestions.

Question 36: Do you agree with the proposed factors for financial corporate debt instruments? If not, please explain and provide your suggestions.

Question 37: Do you agree with the proposed factors for common equity (both financials and non-financials)? If not, please explain and provide your suggestions.

Question 38: Do you agree with the proposed factors for selected liquid investment funds? If not, please explain and provide your suggestions.

Question 39: Do you agree with the proposed factors for non-life premiums? If not, please explain and provide your suggestions.

Question 40: Do you agree with the proposed factors for certificates of deposit and undrawn committed lines? If not, please explain and provide your suggestions.

Question 41: Do you agree with the proposed factors differentiation between 3-month and 1-year time horizons? If not, please explain and provide your suggestions.

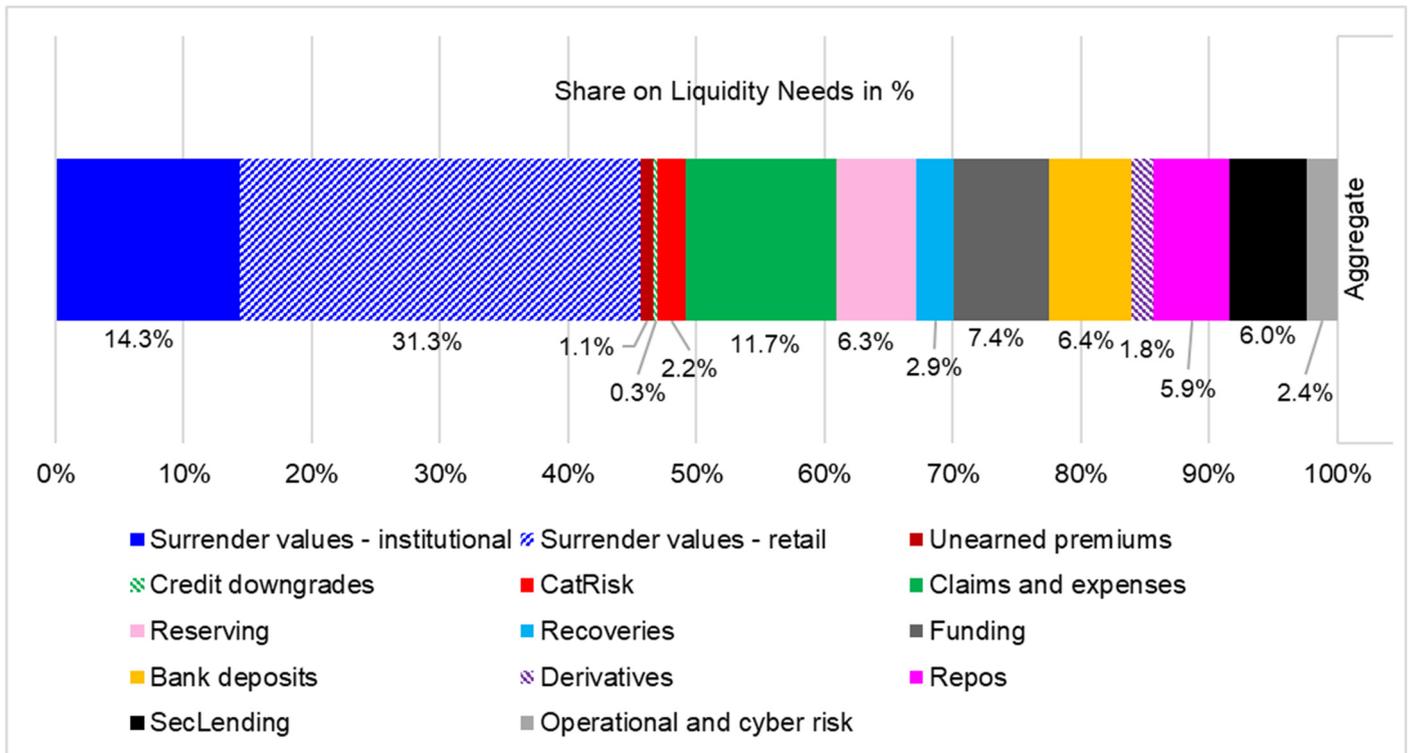
Question 42: Do you think any additional relevant liquidity source should be considered in the ILR calculation? If yes, please explain and provide your suggestions.

3.3 Liquidity Needs

3.3.1 Categories of liquidity needs

The insurers' liquidity needs are the second key input in the calculation of the ILR. This section identifies significant categories of liquidity needs considered in the ILR design. The chart below shows materiality (after applying the factors/weights) of various categories of liquidity needs, using an updated version of the ILR methodology and weights following the feedback received in the 2020 PC.

Figure 5 - ILR Liquidity needs using PCD 2021 factors (YE20)



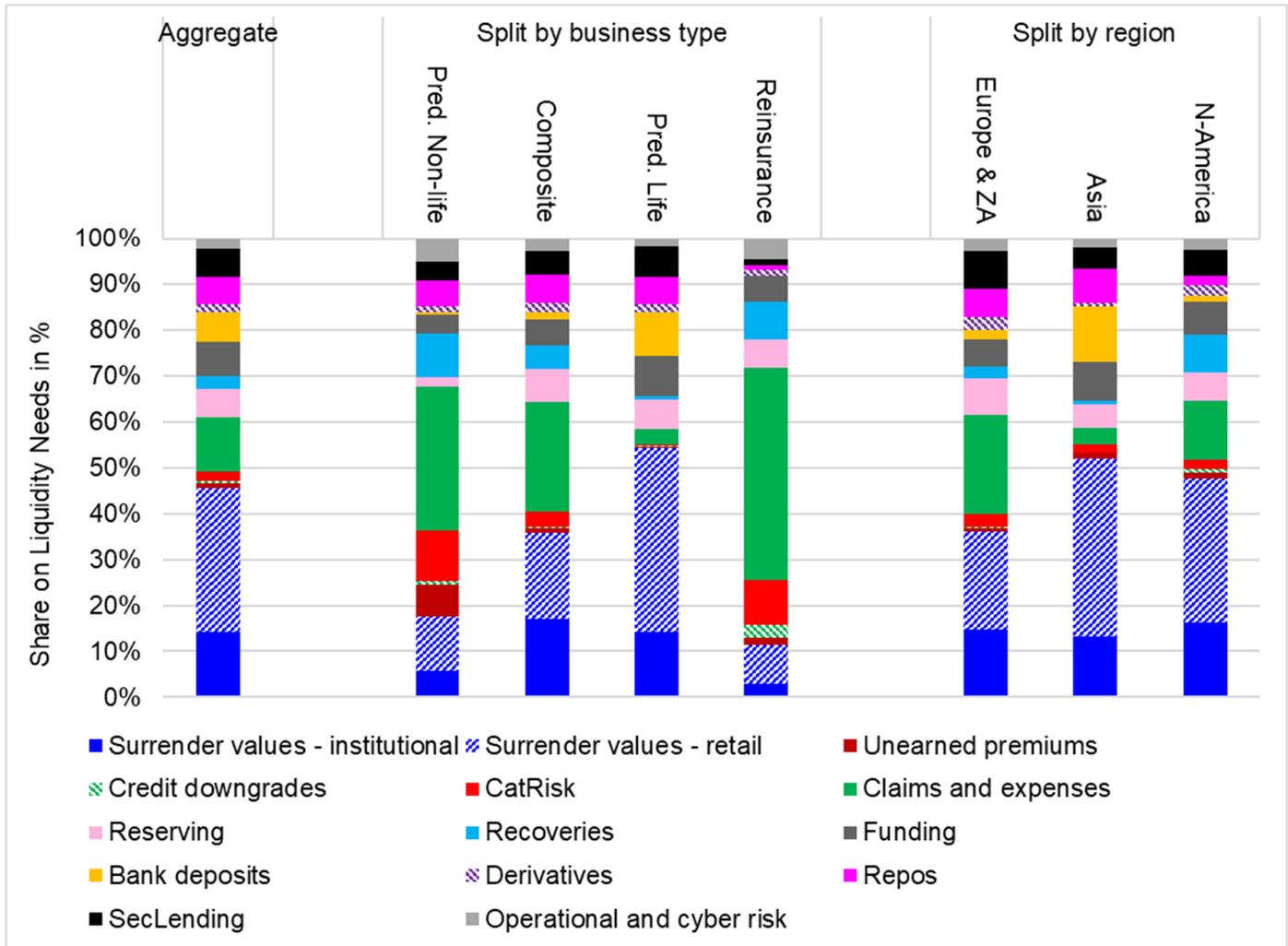
Source: IIM 2021 data collection

In the PC 2020, many stakeholders (especially reinsurers and non-life insurers) mentioned that there are substantial differences in the liquidity profiles of various business models. These differences should be reflected in the ILR calculation. Using the year-end 2020 (YE20) data, the IAIS found that the differences relate primarily to ILR liquidity needs (Figure 6). ILR liquidity sources are quite comparable for all analysed business models (Figure 4). Accordingly, the liquidity needs included in the PC document 2020 were strongly focused on life insurance business, banking products, repos and security lending. As a consequence, the liquidity needs of non-life and reinsurance businesses were captured only partially.

In fact, non-life insurance companies (especially those offering property insurance and casualty insurance) are generally more exposed to an unexpected sudden increase in claims, caused by the adverse consequence of natural and other types of catastrophes, and these insurers often rely on reinsurance contracts to run their business and reduce their exposure. However, the reinsurer may fail to pay according to their needs, be it because of a delay on the side of the reinsurer or an insufficient reinsurance program, triggering sudden funding needs and, consequently, a liquidity shock for the primary insurer. At the same time, the liquidity position of non-life insurers could be impacted by a negative development of their pricing and reserving trends. On the contrary, life insurance companies, due to the intrinsic characteristic of their long-term business, are mostly exposed to mass lapse events generating unforeseen cash outflows and to negative developments of their asset investments and derivative operations. Finally, reinsurance companies are exposed to extreme and tail

disasters such as man-made or natural disasters that may generate sudden and large funding needs. Contractual terms or the inability to liquidate sufficient assets at a reasonable price within a limited time frame, may increase the reputation risk and potentially cause a liquidity shock.

Figure 6 - ILR Liquidity needs per business model and region using PCD 2021 factors (YE20)

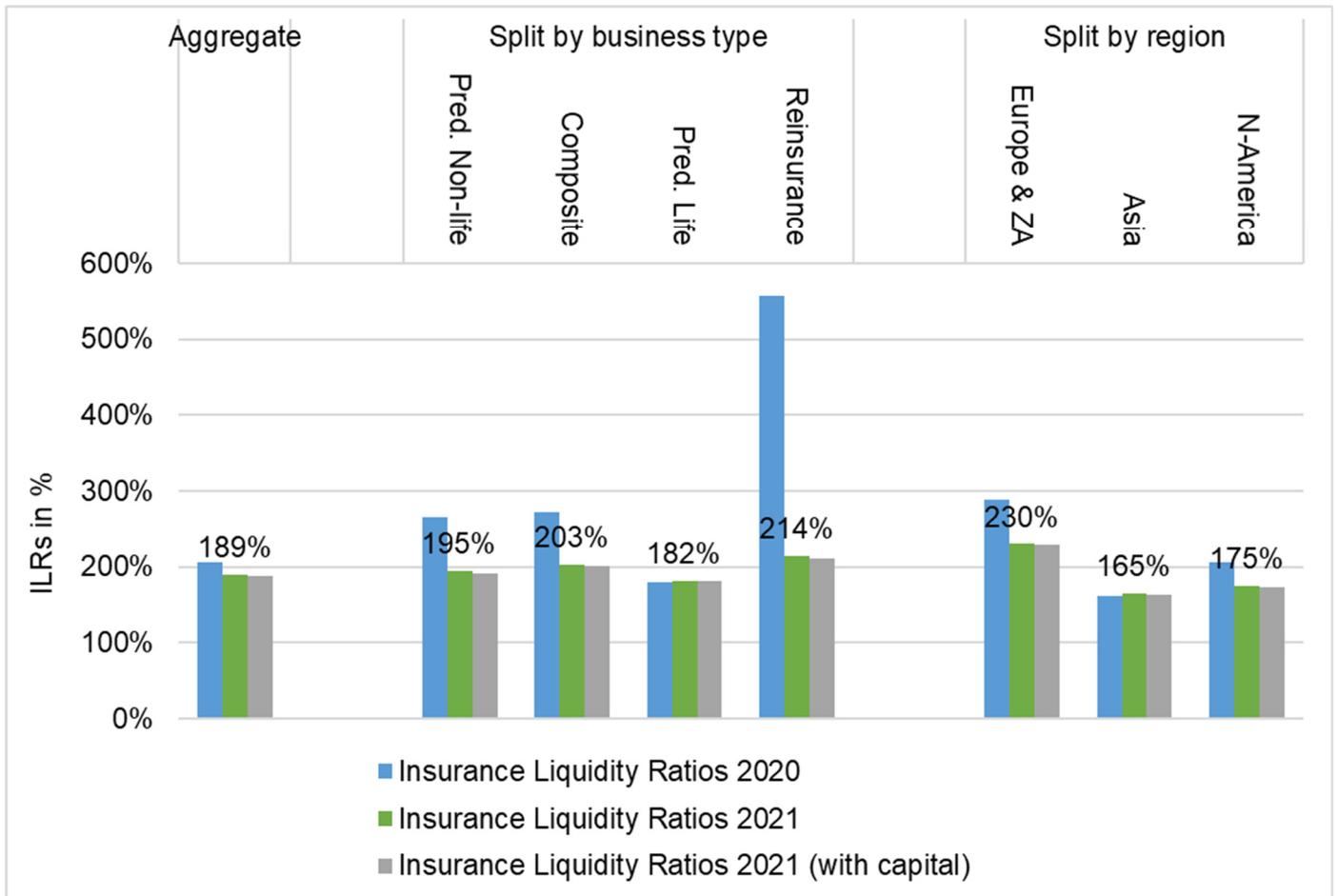


Source: IIM 2021 data collection

Therefore, the ILR methodology has been refined in order to better capture specificities of different business models and to reflect the different liquidity profiles. You may see the results of this updated ILR methodology in the Figure 7. The factors for catastrophe payments and derivatives have been revisited in more detail, while new charges are proposed for non-life claims and expenses, reserving risk, reinsurance recoveries and operational and cyber risk. These changes are further described in the sections below. The ILR is calculated based on the updated methodology, which is in some cases substantially differ from those calculated using the 2020 methodology, with a marked effect especially for reinsurance groups. The

updates reduced the heterogeneity in the ILRs and made them more comparable across various business models and more robust, thereby more suitable for monitoring purposes.

Figure 7 – ILRs: Comparison of 2020 and 2021 factors (YE20)



Source: IIM 2021 data collection

The ILR liquidity needs may be divided into three categories:

- Insurance liquidity needs;
- Non-insurance liquidity needs; and
- Consideration of capital in the calculation of liquidity needs (Liquidity needs adjustment as calculated in section 1.6).

Insurance liquidity needs are the biggest category of ILR liquidity needs and account for more than 70% of the overall liquidity needs component. Most liquidity needs arise from insurance related liabilities, which for the purposes of the ILR comprise surrender values, unearned

premiums, reserving risk, reinsurance recoveries, non-life claims and expenses, and catastrophe payments.

Non-insurance liquidity needs include obligations related to derivatives, bank deposits, funding and repo or securities lending transactions, or needs related to credit downgrades, operational and cyber risk. They account for more than 25% of the ILR liquidity needs.

3.3.2 Insurance Liquidity Needs

3.3.2.1 Liability Surrenders

Surrender values refer to the value of life insurance and annuity liabilities or similar savings products, written as liabilities for insurance licensed entities, that can be surrendered or transferred as cash to an unaffiliated insurer upon the request of policyholders. The value of the surrender is the amount that the insurer is required to pay (total “cash out”) as a result of the policyholder’s request, regardless of whether or not the full payment is remitted directly to the policyholder.³⁵

Although mass surrenders³⁶, withdrawals or terminations are rare in insurance and, therefore, could be considered tail events, they can significantly deteriorate the stability and predictability of future cash flows, having a negative impact on the liquidity of insurance undertakings. The risk of simultaneous withdrawals or policy surrenders by policyholders in the event of negative publicity of an insurer or growing concern on an insurer’s financial condition, is one of the main factors that could threaten the liquidity position of life insurers. The materiality of surrender values in the total liquidity needs of insurance groups in the scope of the 2021 IIM illustrates the significance of this risk (Figures 5 and 6).

An example of a major liquidity stress, intensified by a policyholder run that is driven by eroded consumers’ confidence in the insurer’s ability to pay back the surrender values is that of the Ethias group (accounting for almost 13% of the Belgian insurance market in 2007). During the global financial crisis, the group was particularly hit by the fall in the value of its shareholding in Dexia caused by the bankruptcy and liquidation of the Lehman Brothers group. These losses reduced Ethias group’s capital and solvency positions below the regulatory requirements and led rating agencies to downgrade the group’s rating. Consequently, surrender rates for a specific savings products (“First”) jumped from 0.3% to between 2.44%

³⁵ For the purposes of the calculation of the ILR, surrender values collected via the IIM data collection include: i) Direct life insurance and similar savings products either with a contractual surrender option or where the policyholder has a legal right to surrender at any time (considering the actual situation at the reporting date and not the situation at the underwriting date); ii) Life reinsurance, if it implies a payment to the cedant in case of surrenders by direct policyholders; iii) Group pension contracts; iv) Deposit-type contracts; v) Potential surrender payment on insurance contracts containing bifurcated embedded derivatives. Surrender values exclude the following: i) Policy loans; ii) Any debt-like liabilities whose payments can be accelerated; iii) Deposits at banking subsidiaries.

³⁶ Berdin et al. (2019) estimated that the surrender rates for life insurance savings policies based on historical data typically range between 2% to 10% per year, therefore mass surrenders are those for which the surrender rate exceeds 10%.

and 4.88% in one month³⁷ causing severe liquidity problems and forcing the recapitalisation of the group.

Policyholders' behaviours are based on the complex interaction of factors including the insurer's reputation, the market and economic environment, external rating valuation, the policyholders' personal circumstances, and the product characteristics.³⁸ These factors may change over time and could mitigate or exacerbate the policyholders' intention to withdraw their policies. A non-exhaustive list of mitigating and/or exacerbating factors includes, for example: a surrender value higher than the market value of the underlying assets, the possibility to replace the coverage for comparable costs, the value of insurance policies compared to other investment opportunities, the presence or lack of a credible policyholder protection scheme or mechanism in case of insurer failure, contract features such as premium structure, remaining time in force or fee structure, the share of insurer portfolio invested in liquid or illiquid assets, the tax regime or supervisory measures, the policyholders' income. The purpose of the policy may also play a role in the likelihood of policyholder runs occurring as policyholders are less likely to withdraw from products principally providing protection against specific risks than policies used as a vehicle for saving. Finally, the existence and the level of surrender penalties associated with a contract is a key factor that can disincentive the policyholder decision to surrender in stressed conditions and reduce the surrender risk.

In order to strike a balance between simplicity and risk sensitivity, standardised factors mirroring the main drivers influencing the policyholders' behaviour are applied to the surrender value of insurance liabilities to assess potentially stressed policyholder surrenders. With regards to the surrender values, both time restraints and economic penalty applicable to policyholders wishing to withdraw are key contractual aspects that can heavily influence the propensity of policyholders to surrender: the lower the penalty and the shorter the time restraint, the more likely it is that policyholders may surrender, thus implying a higher liquidity risk for the insurer. For these reasons, the time restraints and the economic penalty have been identified³⁹ as key quantifiable factors determining the factors that liabilities receive under the liability liquidity indicator. This approach captures the most relevant and quantifiable policyholder behaviour drivers ensuring, at the same time, simplicity (ie. limiting the number of dimensions), risk sensitivity and comparability among companies.

The potential inclusion of different factors for saving and protection products has been considered, but the historical data collected did not allow to obtain robust results and clearly identify distinct lapse characteristics between policies purchased primarily for protection⁴⁰ and those serving primarily for savings purposes⁴¹. The time restraints, economic penalty and policyholder's characteristics are categorised into discrete quantitative buckets capturing the

³⁷ ESRB report, "Enhancing the macroprudential dimension of Solvency II", February 2020.

³⁸ For further details see IAIS - "Systemic Risk from Insurance Product Features (previously referred to as Non-traditional Non-insurance activities and products)", 2016.

³⁹ For further details please refer to the IAIS 2016 Methodology: "Global Systemically Important Insurers: Updated Assessment Methodology", 2016.

⁴⁰ Eg. life contracts or products where the protection component is larger than the saving component.

⁴¹ Eg. annuities or products where the savings component is larger than the protection component in terms of present value of death benefit.

sensitivity to policyholder withdrawal. This approach allows to compare in a standardised way insurers' exposures and to assess their liquidity needs deriving from surrenders, withdrawals or terminations.

Table 7 - ILR factors (1-year time horizon) - Liability liquidity: Retail and Institutional

| | | Time restraints | | | | | |
|------------------|--|-----------------------------|---------------|---|---------------|--------------------------------|---------------|
| | | Low (less than < 1 week) | | Medium (between 1 week and < 3 months) | | High (more than > 3 months) | |
| | | Retail | Institutional | Retail | Institutional | Retail | Institutional |
| Economic penalty | Low (no economic penalty) | 50% | 100% | 25% | 50% | 1.25% | 2.5% |
| | Medium (less than < 20% economic penalty) | 25% | 50% | 12.5% | 25% | 0% | 0% |
| | High (more than 20% economic penalty) | 1.25% | 2.5% | 0% | 0% | 0% | 0% |

Table 8 - ILR factors (3-month time horizon) - Liability liquidity: Retail and Institutional

| | | Time restraints | | | | | |
|------------------|--|-----------------------------|---------------|---|---------------|--------------------------------|---------------|
| | | Low (less than < 1 week) | | Medium (between 1 week and < 3 months) | | High (more than > 3 months) | |
| | | Retail | Institutional | Retail | Institutional | Retail | Institutional |
| Economic penalty | Low (no economic penalty) | 25% | 50% | 12.5% | 25% | 0% | 0% |
| | Medium (less than < 20% economic penalty) | 12.5% | 25% | 6.25% | 12.5% | 0% | 0% |
| | High (more than 20% economic penalty) | 0% | 1.25% | 0% | 0% | 0% | 0% |

Surrender values account for more than 45% of liquidity needs of insurance groups in the scope of the 2021 IIM data collection, the majority of which corresponds to insurance policies with retail policyholders (more than 30% of ILR liquidity needs).

Time restraints: Time restraints are based on the average time between the request by a policyholder and the settlement under the normal course of business. The more quickly policyholders are able to access their funds, the more likely it is that insurers may have to engage in disruptive fire sales of assets to make the payments promised. The longer the delay,

the more opportunities insurers will have to spread the sale of assets over time and/or to access liquidity through other means. In addition, a substantial delay in access may create a disincentive for counterparties to surrender their contracts.

Economic penalty: Economic penalty only includes contractual penalties (ie. surrender charges) imposed by the insurer on policyholders that surrender early. It does not include penalties that are imposed by third parties, or are not explicitly quantified in the contract, such as the economic value of foregone benefits. The larger the economic penalty that counterparties must bear on surrenders, the smaller the incentive to withdraw funds. Conversely, the smaller the costs that counterparties must bear on surrenders, the larger the incentives to withdraw funds. A substantial penalty, by itself, will not remove all surrender risk, as some counterparties may be immune to any monetary disincentive (eg. in the case of panic).

The factors are lower for insurance contracts with high contractual penalties and long delays in accessing the surrender value because both these conditions disincentivize the counterparties from surrendering their contracts. To reflect the difference in severity, a graduated approach is applied. The combination of time restraints and economic penalty determines the factors that are for 1-year time horizon similar to liability liquidity indicator of the IIM absolute methodology (Table 7). For the 3-month time horizon, currently half of those factors are used for time restraints up to 3 months. While a more tailored approach is applied in the CPA, the factors included in the ILR allow to capture the main characteristics of the different insurance policies reflecting the variation in surrender attributes across insurance products, ensuring simplicity of the approach and comparability across companies. Moreover, the CPA surrender projections do not provide granular information on the surrenders as just one value is proposed for data collection, the sum of all operating inflows.

Different factors apply to policies held by retail policyholders (ie. policies written to natural persons) and institutional investors. This additional granularity distinguishes between these policyholders because of different levels of awareness of market distress and the relative sophistication of the policyholder's decision-making process with regards to surrenders and withdrawals. In particular, this approach reflects the fact that institutional investors have better decision-making ability and deeper knowledge of the market, therefore they are more sensitive to variation in the market conditions and have greater motive and ability to surrender their contracts for economic incentives than retail clients do. Moreover, as not all liquid liabilities will indeed be surrendered in a stress event, the baseline factors for retail insurance products are half the value of the factors used in IIM absolute assessment. The data collected in the 2021 IIM data collection seems to confirm this assumption. Although the maximum surrender rates observed by the insurance undertakings in 2019 and 2020 do not vary significantly depending on the policyholder characteristics (see Table 9), when looking at the tails, more than 12% of the sample experienced a surrender rate higher than 10% for policies held by institutional investors, while only 4% of the sample experienced severe lapse rates for retail insurance products. Due to its complexity and lack of reliable historical data, the different factors have been derived using the IIM surrenders value data, literature review and expert judgment. Please note that surrender rates show the overall insurers' results without reflecting the split (by time restraints and economic penalty) applied by the IAIS. Detailed recalibration

of surrender rates and the factors is feasible, but requires a substantial number of new data elements that need to be added to the IIM 2022 data collection.

Table 9 - Surrender rates: Retail and Institutional

| | Max surrender rates | | Average surrender rates | |
|----------------------------------|---------------------|------|-------------------------|------|
| | YE19 | YE20 | YE19 | YE20 |
| Retail insurance products | 47% | 50% | 6% | 5% |
| Institutional products | 53% | 50% | 6% | 7% |

Different approaches and criteria are used by ratings agencies to define the factors related to liquidity needs metrics. For example, S&P Life for the United States and Canada uses a 70% base factor for most annuity contracts and a 35% factor for most life contracts. These factors are cut in half for policies with a surrender charge equal to or greater than 5% or those with market-value adjustments.⁴² Outside of the U.S. in its global methodology, S&P Global does not take into account the economic penalty embedded in the contract or time restraints. Instead, it applies a 35% weigh to all lapsable or transferrable life liabilities. This factor is based on global experience. S&P considers 35% of lapsable and transferable life liabilities (eg. all continental Europe participating business, annuity liabilities and with-profit liabilities) to have an abnormally high lapse rate.⁴³

Question 43: Do you prefer to conduct a detailed recalibration of factors for surrender values based on historical surrender rates of participating insurers? Such a recalibration would be a substantial reporting burden.

Question 44: Do you agree with the proposed 3-month time horizon factors? If not, provide your explanation and suggestions.

3.3.2.2 Unearned Premiums

Unearned premiums can be defined as premiums paid-in but not earned that the insurer is legally or contractually obligated to repay on request by the policyholder. Unearned premiums are proposed as a liquidity need in the ILR as they can potentially generate liquidity stress in cases where policyholders have the ability to cancel policies and to receive premium refunds. Despite seemingly limited historical evidence, such cancellations can potentially generate unplanned cash outflows that stress the liquidity position of an insurer.⁴⁴

⁴² Market-value adjustments alter the surrender value of the contract based on current market values. As interest rates increase, the surrender value of these contracts would decrease to avoid creating an incentive to surrender.

⁴³ When comparing this number with the threshold proposed by Berdin et al. (2019), it is important to notice that Berdin et al. base their definition on life insurance savings policies, while S&P refers to lapsable and transferable life liabilities.

⁴⁴ An example of a major liquidity stress intensified by a policyholders' run on unearned premiums is that of the National Surety Company, a U.S. company that had to be resolved during the Great Depression. For more details, see "The Resolution of a Systemically Important Insurance Company During the Great Depression, Jonathan Rose, FEDS Working Paper No. 2016-5, 8 February 2016.

Factors applied to unearned premiums depend on whether these refer to retail or institutional policies, aiming to reflect different levels of awareness of market stress and sophistication in making a decision to terminate a policy. The factors reflect the relative likelihood that there will be a stressed liquidity need during the ILR’s 1-year time horizon and are applied only to the portion of unearned premiums that the insurer would be legally or contractually obligated to repay on request by the policyholder.

Mixed responses were received in the 2020 PC regarding the treatment of unearned premiums, with some stakeholders agreeing with the approach proposed by the IAIS and others considering this component of little relevance for calculating insurance liquidity needs, suggesting lower factors. Given the relatively low materiality of unearned premiums in terms of insurers’ total liquidity needs when considering the factors previously proposed and the data reported in the 2021 IIM data collection (1%, with greater relevance for non-life insurers), the IAIS is keeping the approach unchanged. Moreover, the IAIS will apply the same factors for both the 3-month and 1-year time horizons as the considered liquidity stress is comparable for both.

Table 10 - ILR Unearned premiums – Factors 2021

| Factors | | Liquidity needs | Rows |
|----------------------|---------------------|--|---------------|
| 3-month time horizon | 1-year time horizon | | |
| 10% | 10% | Unearned premiums – retail policyholders | 33.E - 33.E.1 |
| 25% | 25% | Unearned premiums – business policyholders | 33.E.1 |

3.3.2.3 Non-life claims and expenses

Non-life claims and expenses were not proposed as a liquidity need in the PC 2020 on the assumption of a 100% combined ratio for insurers in the scope of the IIM. However, a zero profit assumption was perceived as too conservative by the majority of stakeholders as it is a core business goal for non-life (and some reinsurance) undertakings to generate underwriting profit and excess liquidity by having a combined ratio below 100%. Taking into account the feedback received, the IAIS is now proposing to consider non-life earned premiums as part of the ILR liquidity sources calculation and non-life net incurred claims and expenses as a part of the ILR liquidity needs calculation. Given that this data is already collected in the IIM data collection (in the section on the “Global Monitoring Exercise – Interplays with Sector-wide Monitoring”), no additional reporting will be required from participating insurers.

Net incurred claims and expenses refer to the total value of all net claims and expenses which were incurred by the insurer in the reporting year, including direct and assumed business and deducting the ceded business. For the purposes of the ILR calculation (1-year time horizon), net earned premiums, net incurred claims and expenses would be applied an identical factor of 85%. The inclusion of non-life claims and expenses substantially impacts the liquidity needs composition of reinsurers, composites and groups writing predominantly non-life business. In

parallel non-life premiums are included into the ILR liquidity sources with the identical proposal factors.

Life premiums, claims and expenses are currently not included in the ILR. Many life insurers mentioned in the previous IAIS data collections that loss and combined ratios are not metrics usually used in life insurance. Moreover, life business is already captured mainly by surrender values.

Table 11 - ILR Non-life claims and expenses – Factors 2021

| Factors | | Liquidity needs | Rows |
|----------------------|---------------------|---|--------|
| 3-month time horizon | 1-year time horizon | | |
| 20% | 85% | Non-life net incurred claims (including LAE) | 61.1.N |
| 20% | 85% | Non-life expenses (not included in claims or LAE) | 61.4.N |

3.3.2.4 Reserving risk

Reserving risk was not included in the ILR as a liquidity need in the PC 2020. However, as pointed out by stakeholders, under-reserving can lead to sudden liquidity needs both in life and non-life insurance. Given that no detailed data on reserves or underlying triangle/development factors are collected in the IIM data collection and in order not to increase the reporting burden, the IAIS is proposing to test the inclusion of reserving risk as a liquidity need based on a simplified flat charge of 2.5% to be applied to both life and non-life net technical provisions already reported in the IIM data collection – sheet “Global Monitoring Exercise – Interplays with Sector-wide Monitoring”. The relevance of reserving risk is particularly noticed for groups writing predominantly life business, composite undertakings and reinsurers as shown in section 3.3.1.

Table 12 - ILR Reserving risk – Factors 2021

| Factors | | Liquidity needs | Rows |
|----------------------|---------------------|---|------|
| 3-month time horizon | 1-year time horizon | | |
| 1.25% | 2.5% | Non-life: Flat charge (on net provisions) for potential sudden liquidity needs related to under-reserving | 69.2 |
| 1.25% | 2.5% | Life: Flat charge (on net provisions) for potential sudden liquidity needs related to under-reserving | 69.1 |

3.3.2.5 Reinsurance recoveries

Similarly to non-life claims and expenses and reserving risk, potential liquidity needs stemming from reinsurance recoveries had not been considered in the calculation of the ILR in the previous PC. The feedback from stakeholders suggested that these should be taken into

account in order to capture potential liquidity needs generated by the failure of their reinsurer to pay on time (or at all). In such situations, the payment due by the reinsurer may need to be suddenly covered by the insurer, thereby adding to the insurer’s own liquidity needs. Reinsurance receivables already captured in the data collection in row 27.1.C are used as a proxy for future reinsurance recoveries. The inclusion of reinsurance recoveries mostly impacts the liquidity needs composition of non-life and reinsurance groups, followed by predominantly composite undertakings as shown in section 3.3.1.

Table 13 - ILR Reinsurance recoveries – Factors 2021

| Factors | | Liquidity needs | Rows |
|----------------------|---------------------|------------------------------------|--------|
| 3-month time horizon | 1-year time horizon | | |
| 12.50% | 50% | Reinsurance recoveries/receivables | 27.1.C |

3.3.2.6 Catastrophe Claim Payments

In the IIM 2021 data collection, participating groups were asked to report general insurance catastrophe claim payments as the estimated outflow (including claims and related expenses) across all general insurance perils and the catastrophic event(s) used by the insurer’s internal liquidity monitoring and/or stress testing, and the fraction of that amount that would be expected to be paid within 1-year of the start of the catastrophe scenario, both gross and net of reinsurance recoveries and considering a global event with the probable maximum loss (PML) in 1 in 100, 1 in 200 and 1 in 250 years. These amounts should include all sources of payments from general (re)insurance contracts (for example, payments made for death or injury under workplace liability contract), but exclude payments on stand-alone life (re)insurance contracts for death related to a catastrophic event.

For the purposes of the calculation of the ILR, the IIM 2021 Template focused only on the ceded part of the 1 in 250 catastrophe payments due within one year of the catastrophe scenario (ie. on the difference between the catastrophic claims payments gross of reinsurance and the catastrophic claims payments net of reinsurance) that would be expected to be paid within one year of the start of the catastrophe scenario. These were applied a factor of 100%.

While most comments received for the PC agreed with the use of company projections for the speed of catastrophe payments, there was a general concern related to the chosen PML of 1 in 250, which was perceived as being too conservative. Moreover, there was also a call to consider potential liquidity needs stemming from the failure of the reinsurer to make the due payments on time (or at all) and to consider also payments done beyond one year after the start of the catastrophe scenario. In this context, the IAIS is proposing to update the calculation of liquidity needs stemming from the catastrophe claim payments as follows:

- Consider catastrophe payments stemming from the PML 1/250;
- Consider three types of catastrophe risk sub-exposures originating from liquidity needs:

1. Catastrophe payments: Net (1-year);
2. Catastrophe payments: Net (beyond 1-year); and
3. Catastrophe payments: Gross (1-year) - Net (1-year) = Ceded (1-year)

Sub-exposure 1 captures net payments (real own risk) held by the (re)insurer in the following year and therefore should be applied as the main risk charge. The IAIS proposes a conservative approach, taking into account also sub-exposures 2 and 3. Sub-exposure 2 captures the payments related to catastrophe scenarios that would be paid/settled more than 1-year after the start of the scenario, but that could be due in the following 12 months (if the scenario happened for example two years ago). The IAIS proposes a lower factor for these payments (and a 0% factor for the 3-month time horizon) reflecting:

- Uncertainty on the speed of the claim settlement process. Overly optimistic estimates, predicting that a majority of payments come more than one year after the start of this severe scenario could significantly overestimate the ILR of some (re)insurers;
- Climate change and its increasing physical risk component may lead to more frequent tail events than the historical experience so two 1/250 may occur close to each other; and
- Data validation outcomes: Some (re)insurers reported zeros for payments within the 1-year and allocated all payments in the “beyond 1-year” bucket. This simplification can again overestimate their ILRs.

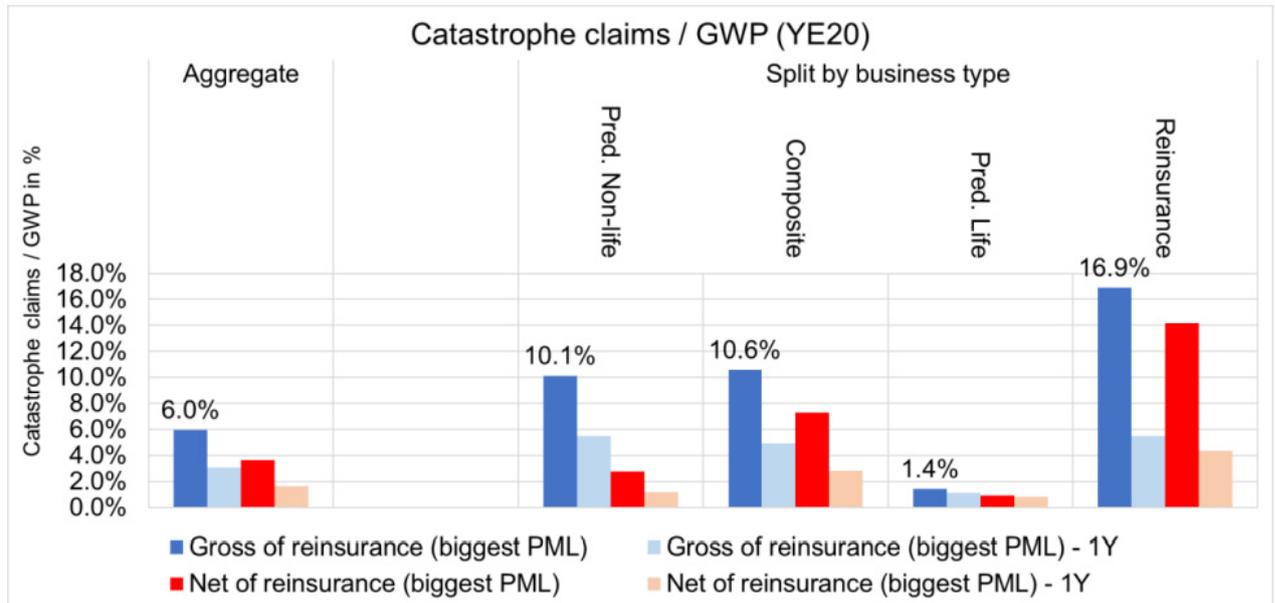
Sub-exposure 3 refers to ceded premiums and is intended to capture any potential issues with catastrophe recoveries or communication or credit quality of reinsurers under the tested PML. The proposed risk charges for each sub-exposure are presented in Table 14.

Table 14 - ILR Catastrophe payments – Factors 2021

| Factors | | Liquidity needs | Rows |
|----------------------|---------------------|--|---------------------|
| 3-month time horizon | 1-year time horizon | | |
| 25% | 100% | Catastrophe payments: Net (1-year) | 33.G.2.a |
| 0% | 50% | Catastrophe payments: Net (beyond 1-year) | 33.G.2 - 33.G.2.a |
| 12.5% | 50% | Catastrophe payments: Gross (1-year) - Net (1-year) = Ceded (1-year) | 33.G.1.a - 33.G.2.a |

Figure 8 shows the estimated outflows reported in the 2021 IIM for the biggest PML (1/250 for most participating insurers) considering both the 1-year and unrestricted horizons and the impact of reinsurance as a share of gross written premiums. On aggregate, estimated outflows for catastrophe claim payments represent a small fraction of gross written premiums both gross and net of reinsurance (6% and around 4%, respectively). Sub-exposures 1 and 2 above are primarily held by reinsurance groups and composite undertakings, while predominantly non-life groups hold primarily the third type of sub-exposure.

Figure 8 - Catastrophe claims standardized by GWP (YE20)



Source: IIM 2021 data collection

Question 45: Do you agree with the proposed factors for non-life claims and expenses? If not, please explain and provide your suggestions.

Question 46: Do you agree that life premiums, claims and expenses are currently not included in the ILR? If not, please provide clarification.

Question 47: Do you agree with the proposed factors for reserving risk? If not, please explain and provide your suggestions.

Question 48: Do you agree with the proposed factors for unearned premiums? If not, please explain and provide your suggestions.

Question 49: Do you agree with the proposed approach for reinsurance recoveries? If not, please explain and provide your suggestions.

Question 50: Do you agree with the refined factors for catastrophe claim payments? If not, please explain and provide your suggestions.

Question 51: Do you prefer a standardized 1/250 PML scenario to be applied for catastrophe claim payments? If yes, provide your suggestions for such a scenario. The current proposal counts with 1/250 PML scenario calculated using insurers' own projections and stress-testing.

3.3.3 Non-Insurance liquidity needs

3.3.3.1 Bank deposits and non-financial liabilities

Bank deposits are traditionally very liquid and withdrawable on demand. This liquidity – along with the illiquidity of bank loans – could incentivise bank runs under certain circumstances.⁴⁵ To mitigate this risk, many governments guarantee certain bank deposits.⁴⁶ Additionally, bank supervisors measure and regulate banks' residual liquidity risks using granular deposit classifications. For example, in the LCR, the factor applied to bank deposits depends on factors including whether:

- The depositor is a natural person;
- The deposit is partially or fully protected by an effective deposit insurance scheme;
- The effective deposit insurance scheme is prefunded;
- The depositor has other relationships with the bank or factors that make them unlikely to move the deposit;
- The deposit is for operational purposes;
- The currency of the deposit; and
- Any notice periods or penalties applicable to the deposit and past waivers of these periods or penalties.

In order to reduce the reporting burden, the ILR includes a less granular treatment of bank deposits. Most insurers do not control a depository institution and do not rely on bank deposits for funding. Bank deposits contribute to total ILR Liquidity Sources by approximately 6%. This contribution is, however, concentrated within up to 10 participating insurers. A majority of stakeholders supported factors proposed for bank deposits in the PC 2020. The treatment of bank deposits in the ILR thus remains unchanged. Stakeholders also supported the usage of these banking-specific factors for bank deposits. In alignment with the scope of the Holistic Framework's IIM, of which this ancillary indicator is a part of, the ILR will include banking business. The IIM and the ILR provide a group-wide perspective on the systemic risk or liquidity position of participating insurers (in comparison to the BCBS' approach in the G-SIB data exercise). This issue was studied and supported by a joint task force of the BCBS and IAIS in 2018-2019. Exclusion of banking business may distort the overall group-wide picture.

In addition to the fact that stakeholders expressed mixed views on the granularity of bank deposits in the ILR. Many of them asked to consider deposit guarantee schemes (DGS) in ILR factors and in their calibration. Such a consideration is linked to an increased number of data points that need to be collected in the IIM data collection. As the topic of bank deposits is material for a smaller subset of the Insurer Pool, the IAIS proposes to include four new optional

⁴⁵ Bank Runs, Deposit Insurance, and Liquidity, Douglas W. Diamond and Philip H. Dybvig, *Journal of Political Economy* 1983 91:3, 401-419.

⁴⁶ *Id.*

data elements for insurers that are willing to report an amount of deposits covered by DGS with regards to:

- Retail and small business time deposits;
- Retail and small business demand deposits;
- Commercial time deposits;
- Commercial demand deposits.

The IAIS proposes to consider DGS in ILR factors by providing them with a 50% discount in comparison to deposits without any deposit guarantee protection. The table below displays the proposed ILR factors for deposit liabilities:

Table 15 - ILR Bank Deposit Factors

| Factors | | Liquidity needs | Rows |
|----------------------|---------------------|---|---------------------------|
| 3-month time horizon | 1-year time horizon | | |
| 20% | 25% | Retail and small business time deposits | 24.3.a |
| 20% | 25% | Retail and small business demand deposits | 24.D.a |
| 40% | 50% | Commercial time deposits | 24.3-24.3.a-24.3.b-24.3.d |
| 75% | 100% | Commercial demand deposits | 24.D-24.D.a-24.D.b-24.D.d |

The proposed factors were influenced by the BCBS’s LCR and NSFR factors. As the ILR uses fewer categories of bank deposits than the approaches used by bank supervisors, bank supervisors could apply a range of different factors to bank deposits within the same ILR category. The proposed factors are generally at the upper end of the range of factors that may be applied by a bank supervisor. This approach is actually more conservative than the one used in banking supervision. This was done because of the ILR’s longer time horizons relative to the LCR (30 days). Additionally, the ILR’s purpose differs from bank liquidity regulations. While the LCR and NSFR set binding requirements, the ILR is a monitoring tool with different costs to false positive and negative results. The factors proposed for the supplementary 3-month time horizon are slightly lower than for the 1-year time horizon, reflecting lower uncertainty linked to the shorter time horizon.

The proposed factors were also influenced by the relative magnitude of the factors applied to the cash value of insurance products. Surrenderable insurance liabilities are generally less liquid than banking products. They typically have higher penalties for withdrawal, longer delays in accessing funds and withdrawal results in a loss of insurance coverage. Partially mitigating these features is that while some policyholder protection schemes exist, most insurance contracts do not benefit from the same level of government protection as bank deposits. The ILR would only apply these factors to liabilities from a licensed banking subsidiary. Deposit-type products issued by an insurance company (ie. products that do not transfer significant insurance risk) would be assessed using the factors for insurance products.

Question 52: Do you agree with the IAIS proposal to consider DGS in the ILR factors for bank deposits? Please provide your comments and suggestions.

Question 53: Do you agree with the 3-month time horizon ILR factors for bank deposits? If not, provide your comments and suggestions.

Question 54: Do you agree that there is currently no liquidity need considered for the non-financial type of business that some insurance groups may conduct? If not, please provide your suggestions.

3.3.3.2 Derivatives

The ILR includes estimated potential cash flow needs from derivatives. Insurers should maintain sufficient liquid assets to be able to settle derivative liabilities within the time horizon. Many stakeholders supported in the PC 2020 the proposal for derivatives treatment. The derivatives treatment in the ILR thus remained stable with few minor refinements. The refined approach contributes to total ILR Liquidity Sources by approximately 1.8%.

The ILR's treatment of derivatives leverages off the approach developed by the BCBS. Banks are large users of derivatives and the potential liquidity needs from a derivative contract should not depend on whether the derivative is owned by an insurer or bank. In particular, the ILR would be similar to the BCBS's NSFR. The NSFR approach was adjusted for consistency with other elements of the ILR (eg. the treatment of certain encumbered assets) and to reflect the ILR's different numerator and denominator definition (ie. liquidity sources and needs rather than available and required stable funding).

The ILR includes as a liquidity need 100% of ILR gross derivative liabilities. ILR gross derivative liabilities is calculated by contractual netting sets. A contractual netting set is the set of all contracts subject to a master netting agreement. Derivative transactions not subject to a master netting agreement are their own contractual netting set. ILR gross derivative liabilities is the sum of the netting sets that have a negative replacement cost from the perspective of the insurer (ie. the insurer's current position has a negative market value).

$$\sum_{\text{netting sets}} \max(-\text{gross replacement cost of derivatives in netting set}, 0)$$

The ILR gross derivative liabilities does not include the value of any bifurcated embedded derivatives related to insurance contracts. The liquidity risk on these products is assessed using the liquidity needs of surrenders. On the other hand, the ILR gross derivative liabilities does include any bifurcated embedded derivatives that do not have a host insurance contract. Moreover, the ILR gross derivative liabilities do not include the value of any cash or securities collateral pledged or received in the calculation of ILR Gross Derivatives Liabilities.

Few stakeholders suggested that the IAIS should consider also derivative assets in the ILR calculation, as a part of the ILR liquidity sources (with a factor that will be determined by data analysis in 2022). Derivative assets are included in the LCR design as a part of its

denominators, in a calculation of cash inflows and cash outflows. Derivative assets are partially covered also in the NSFR calculation of required stable funding.

The ILR also adjusts for Eligible Cash Variation Margin. An insurer’s liquidity needs are decreased by any cash payments already made to counterparties on affected derivative contracts. These cash payments would be offset from derivative liabilities to the extent that this value was not otherwise included in the ILR’s numerator. Similarly, any cash collateral received from counterparties in derivative transactions could be a source of liquidity for the insurer and should be offset from derivative liabilities if not otherwise included in the numerator. Some stakeholders in the PC 2020 proposed to include also other types of collateral under the Eligible Cash Variation Margin (as done by the BCBS), for example very liquid securities.

Similar to the NSFR, the ILR includes 20% of derivative liabilities within the ILR’s denominator to account for potential valuation changes on derivative contracts. Additionally, 85% of the current fair value of securities posted as initial margin by an insurer for derivative contracts would be included as a liquidity need. This reflects that insurers will have a continued need for some liquid assets that can be posted as an initial margin.

Table 16 - ILR Derivative Factors

| Factors | | Liquidity needs | Rows |
|----------------------|---------------------|--|-------------|
| 3-month time horizon | 1-year time horizon | | |
| 50% | 100% | ILR Gross Derivative Liabilities - Eligible Cash Variation Margin Offset | 39.5 - 39.6 |
| 85% | 85% | Initial Margin | 39.9 |
| 10% | 20% | ILR Gross Derivative Liabilities | 39.5 |

Some participating insurers were unable to report newly introduced data rows as described in the table above. Not reported data for the new data rows led to skewed results and underestimated ILR 2020 liquidity needs (ie. overestimated some ILRs in 2020) for some insurers. In order to fix this data gap, the IAIS proposes a floor for the derivative ILR liquidity need. The floor applies only to participating insurers who do not submit 3 derivative-related ILR rows.

Floor = 1% of the “All Derivatives Gross Notional Amount” {data row: 40.A.1}

The floor for the derivative ILR liquidity needs was calibrated using IIM 2021 data:

- Median ratio of “ILR derivative charge” to “All Derivatives Gross Notional Amount” = 0.8%
- Average ratio of “ILR derivative charge” to “All Derivatives Gross Notional Amount” = 2.7%

The factors proposed for the supplementary 3-month time horizon are lower than the 1-year time horizon factors, reflecting lower uncertainty linked to shorter time horizons, especially

with regards to the gross derivative liabilities. The factor for initial margin remains unchanged considering the going concern principle and continued need for some liquid assets that can be posted as initial margin in maintaining active derivative operations.

Question 55: Do you agree with the inclusion of derivative assets into the ILR Liquidity Sources? If not, please explain and provide your clarification. If yes, provide your suggestions on factors for such derivative assets.

Question 56: Do you agree with the current IAIS proposal to include only cash collateral into the Eligible Cash Variation Margin? If not, provide your comments and suggestions.

Question 57: Do you agree with the 3-month time horizon ILR treatment of and factors for derivatives? If not, provide your comments and suggestions.

Question 58: Do you agree with the floor as proposed by the IAIS to protect a level-playing field for all insurers? If not, provide your comments and suggestions.

3.3.3.3 *Other Funding Liabilities and potential liquidity needs*

The ILR also captures other sources of short-term funding and long-term debt that may come due in the next year. The ILR assumes that during a time of stress, an insurer would not be able to roll over unsecured short-term debt or issue more long-term debt. Additionally, investors are assumed to exercise any options that would shorten the maturity of outstanding debt or draw upon any contingent funding that the insurer provides.

Securities lending transactions and repurchase agreements are measured on a gross basis. This treatment is consistent with the inclusion of the relevant encumbered assets in the numerator of the ILR. While securities lending transactions represent a liquidity needs in the denominator, the assets securing this funding would also represent a liquidity source. Repurchase agreements include the total gross fair value of recognised and non-recognised repurchase transaction liabilities (also called "securities sold under agreements to repurchase"). This gross fair value is equal to the amount of cash and securities borrowed against securities collateral. Repurchase agreements include all transactions regardless of whether or not the contract contains the right to resell, re-use or re-hypothecate the collateral (assets borrowed). Securities lending transactions cover the gross fair value of all recognised and non-recognised securities lending liabilities (ie. the amount of cash or fair value of non-cash collateral received from the counterparty in exchange for lending securities) including all transactions regardless of whether or not the contract contains the right to resell, re-use or re-hypothecate the collateral.

The ILR also includes as a liquidity need any potential payments as a result of a credit downgrade. The materiality of this liquidity need is rather smaller $\approx 0.3\%$ of the ILR liquidity needs. The maximum value of any additional payments, capturing collateral or margin that could be required in the event that the insurer, its holding company or any subsidiary is downgraded or breaches any other covenant triggers based on financial health, other than credit ratings (covenants driven by regulatory capital levels, leverage ratios, etc.) excluding

long-term debt that can be accelerated and including payments from all reinsurance contracts. The worst case results out of three scenarios is applied:

- two notches,
- to BB+, or
- to C.

Stakeholders proposed other options to consider the potential liquidity needs from a downgrade (eg. cash flow stress scenarios or individual assessment of circumstances). Taking into consideration a low materiality of this type of liquidity needs and trying not to increase the size of the IIM data call, the IAIS decided to keep its approach unchanged.

Table 17 - ILR Funding Liability Factors

| Factors | | Liquidity needs | Rows |
|----------------------|---------------------|---|-----------------------------------|
| 3-month time horizon | 1-year time horizon | | |
| 75% | 100% | Short-term debt and the current portion of long-term debt | 25 |
| 50% | 100% | Long-term debt that can be accelerated | 25.A + 25.B |
| 75% | 100% | Gross repurchase agreements and security lending transactions | (42.4 - 42.4.S) + (43.4 - 43.4.S) |
| 12.5% | 25% | Pledged contingent funding including credit facilities | 12.1 |
| 50% | 100% | Potential liquidity needs from a downgrade | 33.F |

Question 59: Do you agree with the proposed approach to securities lending transactions and repurchase agreements including the factors? If not, provide your comments and suggestions.

Question 60: Do you agree with the 3-month time horizon ILR factors for other funding liabilities and potential liquidity needs? If not, provide your comments and suggestions.

3.3.4 Operational and cyber risk

The ILR 2020 did not consider any liquidity needs related to daily operations, natural or human caused catastrophes or cyber events. Examples include big ransomware attacks, earthquakes, floods and other such events. All these events can lead to sudden liquidity needs that are proposed to be considered in the ILR 2021.

Gross written premium (GWP) is considered a comparable measure of the scale of business activities of insurance companies. The bigger the insurance company is, the higher the GWP is and the bigger the potential liquidity needs related to operational and cyber risk may be.

The IAIS acknowledges that detailed company projections may lead to more precise estimates of this liquidity need but, at the same time, the IAIS does not want to add multiple new data cells into the IIM data collection and thus proposes a flat percentage on the GWP as a consideration of potential liquidity needs related to sudden operational or cyber related events.

Table 18 - ILR Operational and Cyber Risk Factors

| Factors | | Liquidity needs | Rows |
|----------------------|---------------------|--|------|
| 3-month time horizon | 1-year time horizon | | |
| 5% | 5% | Gross written premium (last 12 months) | 18 |

Question 61: Do you agree with the proposed factors for operational and cyber risk? If not, please explain and suggest an alternative treatment.

Question 62: Did the IAIS omit any other material type of insurance, non-insurance or operational liquidity needs that should be considered in the ILR calculation? If yes, provide your suggestions.

4 Other liquidity metrics

4.1 Aspects for consideration in own liquidity metrics

Individual insurers might consider several aspects when managing their liquidity. Those aspects allow them to take into account the specificities of their business and thus help to better predict their liquidity situation. The inclusion of such aspects in a standardised approach like the ILR or CPA would be too difficult or would increase the need for reporting of very sensitive data. The IAIS described 9 aspects that are easier to consider in own liquidity metrics. These aspects cover the main limitations of the proposed EA and CPA.

4.1.1 Fungibility and fungible liquidity pools

The fungibility of liquidity sources between legal entities of the same insurance group within and across jurisdictions is key for a realistic assessment of the liquidity position in stressed market conditions. While the liquidity position in normal market conditions is also important, the perspective under stressed conditions is vital also from a supervisory perspective. In a consolidated view without respective restrictions, one would assume full fungibility. In a group environment with different regulated entities, maybe even in different industries and across different jurisdictions, the assumption of full fungibility even under stressed market conditions may be unrealistic. The use of liquidity pools could overcome such shortcomings.

The correct set-up of fungible liquidity pools within groups could ensure that realistic fungibility assumptions are reflected. If properly defined, liquidity flows within such pools are economically and legally possible without any restrictions. One important element is to correctly reflect how internal group transactions are accounted for, also in stressed market conditions.

It is important to keep in mind that a fungible liquidity pool is very different from a cash pool. A cash pool within a group aims to optimise cash balances within that group, reduce group-external debt and ideally obtain more favourable conditions from banks. Typically, the more companies participate within a group in a cash pool, the more efficient it becomes. Companies have to clearly define what type of cash balances are part of the cash pool. A liquidity pool contains specific entities and one can assume that liquidity flows between companies are possible without any restrictions, so that the liquidity sources are fully fungible. In addition, a fungible liquidity pool gives a perspective to realistically assess the liquidity situation also in stressed market conditions. Also refer to chapter 1.5 on fungibility.

4.1.2 Currency and liquidity currency baskets

Both liquidity needs and liquidity sources might be in a currency that is different from the reporting currency of the insurance group. It is essential that a group captures and manages the risks arising from a potential currency mismatch. One way to take this into account when measuring liquidity on a group level would be to use currency baskets based on expected currency needs instead of the group reporting currency. This could more closely reflect the way that liquidity should be managed. The use of currency baskets requires sophisticated FX hedging strategies that need to be properly accounted for. This would necessarily be very specific to each group, which means that it would need a lot of additional information to be provided if taken into account by the IAIS.

4.1.3 Assumptions for discretionary cash flows

Standardised liquidity metrics like the ILR and CPA assume that all planned cash flows are paid or received regardless of the future situation in which the insurer finds itself. However, some planned payments such as dividends or asset purchases may be suspended, reduced or postponed. On the funding side, stand-by credit facilities may be drawn. Not taking this into account would reduce the reliability of the liquidity assessment especially in potential stress situations involving liquidity shortages. Therefore, insurers can improve their liquidity assessments by differentiating between committed and discretionary cash flows within liquidity planning. This involves an assessment of the nature and further analysis of all cash flows (committed, discretionary), ensuring that a deeper understanding of the insurer's unique situation is achieved.

4.1.4 Off-balance sheet items

Off-balance sheet items can materially affect liquidity. This is especially the case after stress events with a major impact on liquidity (extraordinary loss events, high financial market volatility etc.). Therefore, it is essential to take into account the potential effect of off-balance sheet items in liquidity metrics. Financial cash flows are strongly influenced by off balance sheet items. In situations involving liquidity shortages, insurance companies may improve their liquidity position by accessing committed credit lines or by issuing new unsecured debt. Potential payment obligations can increase liquidity shortages in a stressed situation (requirement to post additional collaterals or to make payments). Such obligations can arise from insurance contracts (eg. requirements to post additional collaterals or to make additional payments), but also from financial instruments like derivatives and structured products. To adequately assess liquidity, insurer should therefore understand potential financing sources

and payment obligations and its mechanisms. An analysis of the relevant contractual obligations and rights with regards to their liquidity impact is essential. Standardised liquidity metrics can only partially reflect off-balance sheet items.

4.1.5 Access to liquidity platforms

Assumptions on the possibility to liquidate certain assets and on the costs involved in doing so (ie. haircuts) also very much depend on access to liquidity platforms. In general, groups normally only access liquidity platforms from a few legal entities in a few jurisdictions. Hence the aspect of fungibility not only applies to the transfer of cash to the place where it is needed but also to the transfer of eligible assets to a location where liquidity platforms can be accessed. Some assets might be highly liquid (eg. certain government bonds), still, in order to obtain cash, their ownership would need to be transferred to a subsidiary with access to liquidity platforms. Operational risks when initiating such a process and accessing such platforms in a stressed situation and dependency on financial market infrastructure could be taken into account in an insurer's own liquidity assessment. A purely quantitative inclusion of this aspect in a standardised liquidity metric does not seem feasible.

4.1.6 Variability of business models

In respect of liquidity patterns and characteristics, there are big differences among various sectors of the insurance industry as well as among different business models. Besides this, also the status of a company in its life cycle would have an important impact. When just focusing on the operating side of the business and ignoring the investing and financing side, a company with significant new business but also a company in run-off can be exposed to a significant strain on liquidity. Standard liquidity ratios are probably not able to sufficiently capture such specifics without a significant increase in the reporting burden.

4.1.7 Different assumptions for baseline going concern and stressed

For insurers, liquidity management is key both under normal conditions as well as under stressed conditions. Under normal conditions, the purpose is to optimise the liquidity position whereas under stressed conditions, the focus is rather to meet self-defined or required liquidity risk tolerance criteria. It is also legitimate that certain discretionary liquidity funding options are not considered under normal conditions since it is not necessary and would lead to additional costs. However, under stressed conditions such funding options would be exercised. This would lead to the conclusion that liquidity ratios under stressed conditions are not comparable to liquidity ratios under normal conditions. In an extreme case, it could even mean that liquidity ratios under stressed conditions are higher than under normal conditions. However, with a reconciliation between the two scenarios one could again come to comparable ratios.

4.1.8 Various models for short and long-term liquidity

The main drivers for short-term liquidity might differ substantially from those for long-term liquidity. On the side of liquidity requirements, examples might be margin calls for derivatives that have to be paid on short notice whereas an increase in surrenders might, in some cases, only be visible after several months. On the asset side, the differentiation between highly liquid assets and less liquid assets that might be liquidated over the course of a year is rather obvious. Depending on the insurer, its business and liquidity management, such differences

might be accounted for using not only different parametrizations but also different models for short and long-term liquidity. While being suitable for each insurer and its internal liquidity management, such models might not be comparable between insurers.

Also refer to chapter 3.1.2 on the treatment of different time horizons in the ILR.

4.1.9 *Simulations for lapse risk*

Especially for life insurers, lapse risk can be a major factor for the assessment of their liquidity. Instead of using a factor approach as is the case, for example, in the ILR, a simulation of lapse effects based on market parameters might be more accurate. Such simulations depend on many parameters and formulae that might differ between jurisdictions, insurers and even insurance contracts. Such an approach, therefore, requires additional analysis done by both the insurer and the supervisor to lead to reliable results. Because of these differences, customized lapse simulations would not lead to results that can either be easily compared between insurers or aggregated for a sectoral view.

4.2 Data collection on own liquidity metrics

4.2.1 *Current liquidity (business as usual, pre-stress)*

In order to obtain a minimum amount of information on insurers own liquidity measurement, current liquidity sources and needs at the reporting date as determined, for example, by the models used for ERM purposes will be included in the liquidity monitoring (IIM data collection, rows 53.1 and 53.2). These two rows enable the IAIS to calculate the current liquidity ratios (business as usual) and also the current excess liquidity.

$$\text{Current Liquidity Ratio} = \frac{53.1}{53.2}$$

$$\text{Current Excess Liquidity} = 53.1 - 53.2$$

If different liquidity metrics are computed with different assumptions, the current liquidity targets the metrics most utilised by the company in ERM through applications such as in reporting to senior management and the board, risk limits, and early warning indicators in a contingency funding plan.

4.2.2 *Stressed liquidity*

Data collected in the past showed that the liquidity under stressed conditions is very inconsistent across insurers in the sample. This is partially based on differences in the scenarios used by insurers that might differ in severity, general implementation and effect. In part, it can also be attributed to different usage of the aspects presented in this chapter that leads to stressed liquidity needs and sources that are not comparable across insurers. In addition, some of the liquidity management systems applied by insurers would normally not yield single numbers on a consolidated group level (eg. in the case of several fungible liquidity pools). The numbers requested for the IIM, therefore, could not always be easily prepared by insurers.

For these reasons, the IAIS decided not to continue to collect quantitative data on own stressed liquidity. Qualitative information on insurer's liquidity stress scenarios will still be collected to allow the IAIS to improve its definitions for future liquidity stress scenarios.

4.2.3 Aspect usage

Questions on the usage of aspects presented in this chapter will be added to the qualitative section of the IIM. Those questions will allow us to choose the following answer options for each of the aspects:

- Yes, used in internal liquidity management and measurement;
- Yes, used in internal liquidity management only;
- Yes, used in internal liquidity measurement only;
- No, currently not used but future usage planned; and
- No, not used in internal liquidity management or measurement.

The answers to these questions will allow the IAIS to further define areas for future analysis and better assess possible shortcomings of currently proposed metrics.

4.3 Excess Liquidity

Excess Liquidity is useful for managing intra group liquidity. On a consolidated group level, an easy to understand liquidity ratio is often used.

From a sector-wide perspective, excess liquidity could nevertheless have some benefits. While ratios can be easily compared, excess liquidity can be aggregated to attain an overall liquidity footprint of the insurance sector. Such a liquidity footprint could be set in reference to other sectors or the financial market as a whole. This could be used to assess the systemic relevance of the insurance sector's liquidity, both on jurisdictional and global level.

There is no additional data required to allow for the calculation of excess liquidity information in addition to liquidity ratios. Liquidity needs will be deducted from liquidity sources to calculate excess liquidity or liquidity deficit. This will be done under all approaches presented in this paper.

Question 63: Do you agree with the description of aspects of other liquidity metrics provided in Section 4?

Question 64: Do you want to propose any other liquidity metric for liquidity risk monitoring that is not mentioned in sections 2, 3 and 4 of this document? If yes, please elaborate on its calculation and data requirements.

5 Next steps

The IAIS welcomes feedback from stakeholders on the proposed CPA, EA and other liquidity metrics. The responses and suggestions collected in the interim PC 2020 helped to refine the ILR and the EA in general. In response to the comments that will be collected in this consultation and outcomes of the further data analysis, in February 2022, the IAIS will revise the Technical Specifications for the IIM 2022 Data Collection Exercise.

The IAIS will also update the Technical Specifications to collect data needed to implement stakeholders' suggestions if this data has not previously been collected. For example, the IAIS may consider collecting more granular data for the CPA/EA or collecting data on a basis of fungible liquidity pools, depending on the feedback received from this consultation.

During 2022, the IAIS will focus on the following tasks:

- Refinements and finalisation of the EA (including calibrations of factors and finalisation of the ILR formula);
- Refinements and finalisation of the CPA (including calibration of the stress scenario, its application and calculation of different types of cash flows);
- Refinements of other liquidity metrics;
- Consideration of various business models in the CPA/EA;
- Consideration of fungibility in the CPA/EA;
- Consideration of capital in the CPA/EA; and
- Consideration of various time horizons in the CPA/EA .

In 2022, during the regular review of the IIM methodology, the IAIS may also reconsider the inclusion of the ILR, CPA or their elements (eg. liquidity sources) into the IIM assessment methodology that currently includes only liability liquidity as a separate indicator.

The IAIS plans to finalise Phase 2, including a set of liquidity monitoring metrics, in 2022. Phase 2 is planned to be accomplished by a publication of the Level 2 document "Liquidity metrics as an ancillary indicator" (expected in November 2022). In addition, the IAIS may decide to continue the liquidity metrics project to refine the calibration of the CPA/EA beyond 2022.

Question 65: Do you prefer a set of liquidity metrics for liquidity risk monitoring purposes? If not, provide clarification.

Question 66: Do you prefer a single liquidity metric (eg. ILR or CPA metrics) for liquidity risk monitoring purposes? If not, provide clarification.

Annex 1: EA – Proposed factors for ILR 2021 Liquidity Sources and Needs

ILR Liquidity sources – Factors 2021

| Factors 3-month time horizon | Factors 1-year time horizon | Liquidity Sources | Rows |
|-------------------------------------|------------------------------------|--|---------------------|
| 100% | 100% | Cash | 9.4.a |
| 95% | 100% | Sovereigns rated AA- and above | 9.5.1 |
| 90% | 100% | Sovereigns in local currency | 9.5.2 |
| 75% | 85% | Sovereigns rated A- and above | 9.5.3 |
| 60% | 70% | Sovereigns rated BBB- and above | 9.5.3.BBB |
| 75% | 85% | GSE securities senior to preferred shares rated above A- | 9.5.7a & 9.5.7b |
| 50% | 70% | Investment-grade covered bonds | 9.5.4 |
| 60% | 70% | Investment-grade public sector entity debt | 9.5.8 |
| 50% | 70% | Non-financials: Investment-grade corporate debt securities | 9.5.5 |
| 40% | 50% | Non-financials: Common equity | 9.5.6 |
| 50% | 70% | Financials: Investment-grade corporate debt securities | 9.5.5.F |
| 40% | 50% | Financials: Common equity | 9.5.6.F |
| 40% | 50% | Certificates of Deposit | 9.5.9 |
| 10% | 15% | Undrawn committed lines | 11.1 |
| 15% | 20% | Investment funds: Liquid mutual and MMFs | 9.10.1.L & 9.10.2.L |
| 10% | 15% | Investment funds: Liquid ETFs | 9.10.3.L |
| 20% | 85% | Non-life net earned premiums in the last year | 61.2.N |

ILR Liquidity needs – Factors 2021

ILR factors (1-year time horizon) - Liability liquidity: Retail and Institutional

| | | Time restraints | | | | | |
|------------------|---|------------------------------------|---------------|--|---------------|---------------------------------------|---------------|
| | | Low (less than < 1 week) | | Medium (between 1 week and < 3 months) | | High (more than > 3 months) | |
| | | Retail | Institutional | Retail | Institutional | Retail | Institutional |
| Economic penalty | Low (no economic penalty) | 50% | 100% | 25% | 50% | 1.25% | 2.5% |
| | Medium (less than < 20% economic penalty) | 25% | 50% | 12.5% | 25% | 0% | 0% |
| | High (more than 20% economic penalty) | 1.25% | 2.5% | 0% | 0% | 0% | 0% |

ILR factors (3-month time horizon) - Liability liquidity: Retail and Institutional

| | | Time restraints | | | | | |
|------------------|---|------------------------------------|---------------|--|---------------|---------------------------------------|---------------|
| | | Low (less than < 1 week) | | Medium (between 1 week and < 3 months) | | High (more than > 3 months) | |
| | | Retail | Institutional | Retail | Institutional | Retail | Institutional |
| Economic penalty | Low (no economic penalty) | 25% | 50% | 12.5% | 25% | 0% | 0% |
| | Medium (less than < 20% economic penalty) | 12.5% | 25% | 6.25% | 12.5% | 0% | 0% |
| | High (more than 20% economic penalty) | 0% | 1.25% | 0% | 0% | 0% | 0% |

| Factors | | Liquidity needs | Rows |
|----------------------|---------------------|---|-----------------------------------|
| 3-month time horizon | 1-year time horizon | | |
| 10% | 10% | Unearned premiums – retail policyholders | 33.E - 33.E.1 |
| 25% | 25% | Unearned premiums – business policyholders | 33.E.1 |
| 20% | 85% | Non-life net incurred claims (including LAE) | 61.1.N |
| 20% | 85% | Non-life expenses (not included in claims or LAE) | 61.4.N |
| 1.25% | 2.5% | Non-life: Flat charge (on net provisions) for potential sudden liquidity needs related to under-reserving | 69.2 |
| 1.25% | 2.5% | Life: Flat charge (on net provisions) for potential sudden liquidity needs related to under-reserving | 69.1 |
| 12.50% | 50% | Reinsurance recoveries/receivables | 27.1.C |
| 25% | 100% | Catastrophe payments: Net (1-year) | 33.G.2.a |
| 0% | 50% | Catastrophe payments: Net (beyond 1-year) | 33.G.2 - 33.G.2.a |
| 12.5% | 50% | Catastrophe payments: Gross (1-year) - Net (1-year) = Ceded (1-year) | 33.G.1.a - 33.G.2.a |
| 20% | 25% | Retail and small business time deposits | 24.3.a |
| 20% | 25% | Retail and small business demand deposits | 24.D.a |
| 40% | 50% | Commercial time deposits | 24.3-24.3.a-24.3.b-24.3.d |
| 75% | 100% | Commercial demand deposits | 24.D-24.D.a-24.D.b-24.D.d |
| 50% | 100% | ILR Gross Derivative Liabilities - Eligible Cash Variation Margin Offset | 39.5 - 39.6 |
| 85% | 85% | Initial Margin | 39.9 |
| 10% | 20% | ILR Gross Derivative Liabilities | 39.5 |
| 75% | 100% | Short-term debt and the current portion of long-term debt | 25 |
| 50% | 100% | Long-term debt that can be accelerated | 25.A + 25.B |
| 75% | 100% | Gross repurchase agreements and security lending transactions | (42.4 - 42.4.S) + (43.4 - 43.4.S) |
| 12.5% | 25% | Pledged contingent funding including credit facilities | 12.1 |
| 50% | 100% | Potential liquidity needs from a downgrade | 33.F |
| 5.00% | 5% | Gross written premium (last 12 months) | 18 |

Annex 2: Company Projection Approach – Proposed cash inflows and outflows and examples of economic stress factors

The following table shows the proposed cash inflows and outflows that are planned to be used in the CPA calculation.

Cash inflows

Operating inflows

- Premiums and Deposits (Renewal / New Business)
- Cash Charges / Fees
- Reinsurance Recoverables
- Expenses – Intercompany Settlements
- Tax Payments (Inflows)
- Other Flows

Investing inflows

- Principal and Interest
- Dividends / Distributions
- Initial and Variation Margin Received
- Other Collateral Received
- Asset Sales (Pending Settlement)
- Other Flows

Financing inflows

- Capital Contributions
- Commitments
- Dividends from subsidiaries
- Other Flows
- Debt Issuance / Refinancing
- GICs
- FHLB
- Repo / Securities Lending
- Credit Facilities (Incl. Contingency Funding Facilities)
- Intercompany Loans
- Commercial Paper
- Other Flows

Cash outflows**Operating outflows**

- Non-Elective Benefits / Claims
- Elective Benefits / Claims
- Commissions
- Reinsurance Payables
- Expenses - Other
- Expenses - Intercompany Settlements
- Insurance Product Commitments
- Tax Payments (Outflows)
- Other Flows

Investing outflows

- Investment Commitments
- Initial and Variation Margin Paid
- Other Collateral Pledged
- Asset Purchases (Pending Settlement)
- Other Flows

Financing outflows

- Shareholder/Policyholder Dividends
- Capital contributions to subsidiaries
- Dividends to Parent
- Other Flows
- Debt Maturities / Debt Servicing
- GICs Benefits / Maturities
- FHLB
- Repo / Securities Lending
- Credit Facilities (Incl. Contingency Funding Facilities)
- Intercompany Loans
- Other Flows

Examples of economic stress factor definitions (from the US):

- **U.S. real GDP growth:** Percent change in real gross domestic product in chained dollars, expressed at an annualized rate (Bureau of Economic Analysis).
- **U.S. nominal GDP growth:** Percent change in nominal gross domestic product, expressed at an annualized rate (Bureau of Economic Analysis).
- **U.S. real disposable income growth:** Percent change in nominal disposable personal income, divided by the price index for personal consumption expenditures, expressed at an annualized rate (Bureau of Economic Analysis).
- **U.S. nominal disposable income growth:** Percent change in nominal disposable personal income, expressed at an annualized rate (Bureau of Economic Analysis).
- **U.S. unemployment rate:** Quarterly average of seasonally-adjusted monthly data for the unemployment rate of the civilian, noninstitutional population of age 16 years and older (Bureau of Labor Statistics).
- **U.S. CPI inflation:** Percent change in the quarterly average of seasonally-adjusted monthly data for the consumer price index, expressed at an annualized rate (Bureau of Labor Statistics).
- **U.S. Treasury Yield:** Debt obligation of United States government with a maturity of initial issuance (i.e., 3 month, 3 year, 5 year, 7 year, 10 year)
- **U.S. BBB corporate yield:** Quarterly average of the yield on 10-year BBB-rated corporate bonds (Federal Reserve)
- **Asset Backed Securities:** Structured finance securities backed by various assets (i.e., residential mortgages (backed and not backed by Fannie/Freddie Mac); commercial mortgages; credit cards; auto; and a pool of assets such as collateral loan obligations or collateral debt obligations (JP Morgan ABS Weekly Asset Spread Datasheet)).
- **U.S. mortgage rate:** Based on quarterly average of weekly series for the interest rate of a conventional, conforming, 30-year fixed-rate mortgage, obtained from the Primary Mortgage Market Survey of the Federal Home Loan Mortgage Corporation and other sources.
- **U.S. prime rate:** Quarterly average of monthly series of lowest rates that commercial banks charge their most credit worth customers (Federal Reserve).
- **U.S. Dow Jones Total Stock Market (Float Cap) Index:** End of quarter value, Dow Jones.

-
- **U.S. House Price Index:** CoreLogic, index level, seasonally adjusted by Federal Reserve.
 - **U.S. Commercial Real Estate Price Index:** the series corresponds to the data for price of commercial real estate.
 - **U.S. Market Volatility Index (VIX):** Chicago Board Options Exchange, converted to quarterly frequency by using the maximum close-of-day value in any quarter.

Annex 3: IIM 2021 Technical specifications for ILR-related data rows

Green colour highlights new rows that need to be added into the IIM 2022 data collection to implement the ILR as proposed in this document.

Row 9.4.a: Cash ■ □

Report all holdings of cash, including cash and currency on hand, demand deposits with banks or other financial institutions or other kinds of accounts that have the general characteristics of demand deposits. Include central bank reserves only if they can be withdrawn in a time of stress. Do not include cash equivalents, defined as short-term, highly liquid investments that are both readily convertible to known amounts of cash and subject to an insignificant risk of change in value assessed against the amount at inception. Do not include cash which is restricted as to its withdrawal or usage.

Row 9.5: Liquidity of invested assets ■ □

Include only assets that are traded in consistently deep and active repo or cash markets characterised by a low level of concentration on both sides of the transaction. Only include assets that have transparent and accurate valuations.

Only certain encumbered assets may be included. Assets encumbered to collateralize securities financing or derivatives liabilities that are reported in rows 39.2, 42.4, or 43.4 should be included. Assets encumbered for other reason should be excluded. For the purposes of these rows, assets are unencumbered if they are (i) free of legal, regulatory, contractual, or other restrictions on the ability of the reporting entity promptly to liquidate, sell, transfer or assign the assets; and (ii) not pledged, explicitly or implicitly, to secure or to provide credit enhancement to any transaction. Do not exclude assets that are owned outright at a subsidiary of the reporting entity, but have been pledged to secure a transaction with another subsidiary of the reporting entity; to the extent these assets remain unencumbered (ie. assets used to secure an internal transaction that remain unencumbered).

Exclude any assets that are owned strictly for the benefit of the policyholder or contract holder (ie. “segregated accounts”, “unit-linked assets” or “separate accounts”). Exclude any investments in these asset classes through investments funds whose liquidity may differ from its investments. Exclude transactions involving the purchase of securities that have been executed, but not yet settled.

Row 9.5.EA: Encumbered assets reported in 9.5 subrows ■ □

Report all encumbered assets that were reported in any of 9.5 subrows (9.5.1-9.5.9). Certain encumbered assets may be included in 9.5 subrows. Only assets encumbered to collateralize securities financing or derivatives liabilities that are reported in rows 39.2, 42.4, or 43.4 should be included. Provide more clarification on included encumbered assets in the Explanatory Statement.

Row 9.5.1: Highest quality sovereign and supranational securities ■ □

Report all holdings of securities issued or unconditionally guaranteed by sovereign entities or supranational organisations. For this row, the entity or organisation must have at least a credit rating equivalent to or better than AA-, or equivalent, from at least one external rating agency. Such securities must have an explicit guarantee as to the timely payment of principal and interest from the sovereign entity, including the sovereign's central government, agency, ministry, department or central bank, or supranational organisation, which includes the Bank for International Settlements, the International Monetary Fund, the European Central Bank, the European Union, or a multilateral development bank with at least a AA- credit rating from at least one external rating agency. Do not include mortgage backed-securities included in Row 9.5.7.

Row 9.5.2: Sovereign and supranational securities in local currency ■

Report all holdings of securities issued or unconditionally guaranteed by sovereign entities, not included in Row 9.5.1, issued in local currency used to back payments in that jurisdiction or in the insurer's home jurisdiction. Such securities must have an explicit guarantee as to the timely payment of principal and interest from the sovereign entity, including the sovereign's central government, agency, ministry, department or central bank.⁴⁷ Do not include mortgage backed-securities included in Row 9.5.7.

Row 9.5.3: High quality sovereign and supranational securities ■

Report all holdings of liquid securities issued by or unconditionally guaranteed by a sovereign entity or Multilateral Development Bank. For this row, the entity or organisation must have at least an A-, or equivalent credit rating from at least one external credit rating agency, not included in Rows 9.5.1 and 9.5.2. Such securities must have an explicit guarantee as to the timely payment of principal and interest from the sovereign entity, including the sovereign's central government, agency, ministry, department or central bank, or multilateral development. Included securities must be "liquid," which is defined as those whose market price or the market haircut demanded on secured transactions collateralised by the security or equivalent securities has not changed by more than 10% during a 30 calendar-day period of significant stress. Do not include mortgage backed-securities included in Row 9.5.7.

Row 9.5.3.BBB: Other investment grade sovereign and supranational securities ■

Report other investment grade sovereign and supranational securities with rating at least BBB-, or equivalent credit rating from at least one external credit rating agency, not included in Rows 9.5.1 and 9.5.2 and 9.5.3.

Covered Bonds:

Covered bonds are bonds issued by a bank or mortgage institution and are subject by law to special public supervision designed to protect bond holders. Proceeds deriving from the issue of these bonds must be invested in conformity with the law in assets which, during the whole period of the validity of the bonds, are capable of covering claims attached to the bonds and

⁴⁷ There is no credit floor on these securities. See para. 50 (d) at <http://www.bis.org/publ/bcbs238.pdf>.

which, in the event of the failure of the issuer, would be used on a priority basis for the reimbursement of the principal and payment of the accrued interest. Such securities may not be issued by any affiliate or subsidiary of the insurer.

Row 9.5.4.a: Highest quality covered bonds ■

Report all holdings of liquid covered bonds with a credit rating of at least AA-, or equivalent from at least one external credit rating agency, not issued by an affiliate. Do not include mortgage backed-securities included in Row 9.5.7.

Row 9.5.4.b: Investment grade covered bonds ■

Report all holdings of liquid covered bonds with a credit rating of at least BBB-/Baa3, or equivalent from at least one external credit rating agency, not issued by an affiliate. Do not include amounts included in 9.5.4.a or mortgage backed-securities included in Row 9.5.7.

Corporate debt securities: For 9.5.5 rows, corporate debt securities include only plain-vanilla assets whose value is readily available based on standard methods and does not depend on private knowledge (ie. excluding structured products or subordinated debt). “Liquid” is defined as those securities whose market price or the market haircut demanded on secured transactions collateralised by the security or equivalent securities has not changed by more than 20% during a 30 calendar-day period of significant stress.

Row 9.5.5.a: Non-financial highest quality corporate debt securities ■

Report all holdings of liquid corporate debt securities (including commercial paper) with a credit rating of at least AA-, or equivalent from at least one external credit rating agency, **not** issued by financial sector entities or their affiliates.

Row 9.5.5.a.F: Financial highest quality corporate debt securities ■

Report all holdings of liquid corporate debt securities (including commercial paper) with a credit rating of at least AA-, or equivalent from at least one external credit rating agency, issued by financial sector entities or their affiliates.

Row 9.5.5.b: Investment grade corporate debt securities (non-financials) ■

Report all holdings of liquid corporate debt securities (including commercial paper) with a credit rating of at least BBB-/Baa3, or equivalent from at least one external credit rating agency, **not** issued by financial sector entities or their affiliates. Do not include amounts included in 9.5.5.a.

Row 9.5.5.b.F: Investment grade corporate debt securities (financials) ■

Report all holdings of liquid corporate debt securities (including commercial paper) with a credit rating of at least BBB-/Baa3, or equivalent from at least one external credit rating agency, issued by financial sector entities or their affiliates. Do not include amounts included in 9.5.5.a.F.

Row 9.5.6: Liquid common equity securities (non-financials)

Report all holdings of publicly traded common equity issued by a **non-financial sector entity**. Such securities must be included in a major index and must be a reliable source of liquidity, ie. the market price or the market haircut demanded on secured transactions collateralised by the security or equivalent securities has not changed by more than 40% during a 30 calendar-day period of significant stress.

Row 9.5.6.F: Liquid common equity securities (financials)

Report all holdings of publicly traded common equity issued by a **financial sector entity**. Such securities must be included in a major index and must be a reliable source of liquidity, ie. the market price or the market haircut demanded on secured transactions collateralised by the security or equivalent securities has not changed by more than 40% during a 30 calendar-day period of significant stress.

Government Sponsored Entity (GSE) Securities Senior to Preferred Shares:

The 9.5.7 rows refer to mortgage-backed securities issued by or unconditionally guaranteed by a government sponsored entity (GSE). Such securities must have an explicit guarantee as to the timely payment of principal and interest from the GSE. Included securities must be “liquid,” which is defined as those whose market price or the market haircut demanded on secured transactions collateralised by the security or equivalent securities has not changed by more than 10% during a 30 calendar-day period of significant stress. Do not include other PSE debt securities included in Row 9.5.8.

Row 9.5.7.a: Highest quality GSE securities senior to preferred shares

Report all holdings of mortgage-backed securities issued by or unconditionally guaranteed by a government sponsored entity (GSE) with at least an AA-, or equivalent credit rating from at least one external credit rating agency.

Row 9.5.7.b: High quality GSE securities senior to preferred shares

Report all holdings of mortgage-backed securities issued by or unconditionally guaranteed by a government sponsored entity (GSE) with at least an A-, or equivalent credit rating from at least one external credit rating agency. Do not include amounts included in 9.5.7.a.

Row 9.5.8 Investment-grade public sector entity debt

Report all holdings of liquid investment-grade debt securities of public sector entities, including government entities below the sovereign level not included in Rows 9.5.1, 9.5.2, 9.5.3, or 9.5.7. The debt security must be backed by the full faith and credit of the public sector entity. “Debt securities” includes only plain vanilla assets whose value is readily available based on standard methods and does not depend on private knowledge (ie. excluding structured products or subordinated debt). “Liquid” is defined as those securities whose market price or the market haircut demanded on secured transactions collateralised by the security or

equivalent securities has not changed by more than 20% during a 30 calendar-day period of significant stress. Investment-grade refers to securities with a credit rating of BBB-/Baa3 or higher. Securities must meet the investment grade criteria without credit enhancement (ie. bond insurance.) by a financial institution.

Row 9.5.9 Certificates of Deposit ■ □

Include all certificates of deposit with a maturity of less than a year or withdrawal penalty of less than 10% Exclude any deposits reported in row 9.4. Include deposits even if they are not issued as a receipt (ie. certificates of deposit with an International Security Identification Number (ISIN). Do not include demand deposits.

Row 9.10.1.L Investment funds: Liquid mutual funds ■ □

Row 9.10.2.L Investment funds: Liquid MMFs ■ □

Row 9.10.3.L Investment funds: Liquid ETFs ■ □

Definitions for investments funds will be proposed by the IAIS in the IIM 2022 data collection package.

Row 11.1: Size of undrawn committed lines □ □

Report the total maximum undrawn value (total committed amount less the drawn portion) of all committed credit facilities obtained **from third parties**.

Row 12.1: Off-balance sheet or contingent financial liabilities □ □

Report off-balance sheet or contingent liabilities and commitments **to third parties** that are usually disclosed in the notes to the consolidated financial statements. Report the gross notional amount of such obligations (ie. gross of collateral). In addition, provide a breakdown of the data based on notes to the consolidated financial statements in the Explanatory Statement, where available. Exclude contingent liabilities from:

- policy loan provisions in insurance contracts;
- obligations from repurchase agreements and securities lending; and
- potential collateral posting for derivatives.

Row 12.1.a: of which is guarantees of debt

Row 12.1.b: of which is financial guarantees of external entities

Row 12.1.c: of which is undrawn committed lines of credit outstanding

Row 12.1.d: of which is private equity, real estate fund or other investment funding commitments and lease commitments

Row 12.1.e: of which is non-contractual obligations. Please describe these non-contractual obligations in the explanatory statement

Row 18: Gross premiums written ■ ■

Report all premiums written by all entities in all countries. These premiums are the contractually determined premiums on all policies which a company has issued in the period

specified for this report, regardless of how they are accounted for under the national GAAP. For non-life insurance and reinsurance, gross premiums are the sum of direct premiums written, both earned and unearned, before any outgoing reinsurance.⁴⁸ For life insurance and reinsurance, gross premiums that should be included are the stock of insurance written that is recognised that year as earned on the Income Statement and the new flow written that year. If the number is different from what is reported on the Income Statement, please provide details in the Explanatory Statement. Premiums for contracts where insurers do not accept material insurance risk from policyholders should be excluded.

Row 24.3: Certificates of deposit outstanding ■ ■

Report all certificates of deposit outstanding. Certificates of deposit are time deposits where the bank issues a receipt for the funds specifying that they are payable on a specific date seven or more days in the future. Include all certificates of deposit issued as securities, even if they were not issued as a receipt (ie. certificates of deposit with an International Security Identification Number (ISIN). Do not include demand deposits.

Row 24.3.a: of which is from retail or small business customers⁴⁹. ■ ■

Row 24.3.b: of which is from central banks. ■ ■

Row 24.3.c: of which is from financial institutions. ■ ■

Row 24.3.d: of which is from public sector entities. ■ ■

$$24.3.a + 24.3.b + 24.3.c + 24.3.d \leq 24.3$$

Row 24.D: Deposits ■ ■

Report all deposits placed with licensed banking subsidiaries excluding certificates of deposit. These may include, but are not limited, to current accounts, transactional accounts, savings accounts, or time deposits other than certificates of deposit and may include retail or corporate or institutional deposits. These should not be included in Row 24 (and, as a result, in rows 24.1 through 24.4).

Row 24.D.a: of which is from retail or small business customers. ■ ■

Row 24.D.b: of which is from central banks. ■ ■

Row 24.D.c: of which is from financial institutions. ■ ■

⁴⁸ In these instructions, third-party reinsurance is broadly defined, including always both reinsurance from direct insurers and retrocession activities.

⁴⁹ Small business customers are those customers with less than €1 million in consolidated deposits that are managed as retail customers and are generally considered as having similar liquidity risk characteristics to retail accounts. For more information, see the Basel II framework – International Convergence of Capital Measurement and Capital Standards, paragraph 231, June 2006.

Row 24.D.d: of which is from public sector entities. ■ ■

$$24. D. a + 24. D. b + 24. D. c + 24. D. d \leq 24. D$$

Row 25: Short-term borrowing ■ ■

Report all short-term borrowing, namely any debt or debt-like instruments maturing in the next 12 months, in Row 25. This should not include deposits, repurchase agreements or securities lending. The amount reported in this line should be the sum of Rows 25.1 and Row 25.2:

$$25. 1 + 25. 2 = 25$$

Row 25.1: Current portion of long-term debt and debt-like instruments ■ ■

Report the current portion of long-term debt and debt-like instruments. This amount should include all obligations which are due within 12 months that are attributed to long-term debt (original maturity of more than 12 months), including long-term debt obligations that will fully mature and be repaid within the next 12 months. Include amounts linked to deposit-type insurance liabilities.⁵⁰

Row 25.2: Short-term debt and debt-like instruments outstanding ■ ■

Report all short-term obligations with original/initial maturity of 12 months or less. Include amounts linked to deposit-type insurance liabilities. Where a special purpose vehicle (SPV) or other structure is used to transform the maturity of the issued instrument, measure the maturity based on the instrument that is sold to investors (eg., include amounts of long-term funding agreements or fixed annuities that are placed into a SPV to back commercial paper).

Row 25.A: Long-term debt and debt-like instruments with provisions that could accelerate payment ■ ■

Report the total face value of outstanding debt and/or debt-like instruments that contain any covenants relating to the issuing entity's financial condition or provisions that would allow the liability to be sold or put back to the issuer. Examples of such covenants are broadly captured under "Limitations on indebtedness" and may include, but are not limited to, limitations on leverage or interest coverage. Other examples of included liabilities are those extension features (where the issue can or choose not to extend the maturity of the liability) or puttable liabilities. Do not include debt containing only other covenants such as those pertaining to restrictions on payments, liens or assets, changes in control, or failure to pay principal or interest as scheduled.

⁵⁰ Deposit-type insurance liabilities are those products that do not incorporate significant insurance risk. Examples of products that should be reported include Guaranteed Investment Contracts (GICs), Funding Agreements, Annuities Certain, Capital Redemption Contracts, and Funding Agreement-backed or Fixed Annuity-backed securities.

Exclude amounts already reported in Rows 25.1 and 25.2 (borrowing - short term). Exclude amounts linked to deposit-type insurance liabilities and fixed annuities included in 33.A. Provide details of any such financial covenants or ratings triggers in the Explanatory Statement including the amount of the instrument and the specific requirements in the instrument.

Row 25.B: Long-term debt and debt-like instruments where payments could be accelerated at the holder's discretion: ■ ■

Report the total value of all debt and debt-like instruments that contain provisions which allow the holder to request the early payment on the note. Exclude amount already reported in Row 25 (borrowing - short term). Exclude amount linked to deposit-type insurance liabilities. Provide details on any positive amount in the Explanatory Statement. Do not include amounts included in 25.A.

Row 27.1.C: Reinsurance receivable ■ ■

Report reinsurance receivable assets. Include balances recoverable from assuming companies for paid and unpaid losses and loss expenses.

Row 33.A: Surrender value of insurance liabilities (normal course of business)

Report the value of **life insurance and annuity liabilities** or similar saving products written as liabilities of insurance licensed entities that can be surrendered or transferred as cash to an unaffiliated insurer upon a request by policyholders.

The value of the surrender is the amount that the insurer is required to pay (total "cash out") as a result of the policyholder's request, regardless if the full payment is not remitted directly to the policyholder. For example, if the insurer would be required to remit payment to a taxing authority as a result of the surrender, this payment shall be included in the amount reported. Partial surrenders shall be treated in the same way as total surrenders. However, partial surrenders should only be included in the submission if the insurance policy can partially be surrendered in the reporting year.⁵¹

This amount shall include:

- Direct life insurance and similar saving products either with a contractual surrender option or where the policyholder has a legal right to surrender at any time (consider the actual situation at the reporting date and not the situation at the underwriting date);
- Life reinsurance, if it implies a payment to the cedant in case of surrenders by direct policyholders;
- Group pension contracts;
- Deposit-type contracts; and

⁵¹ Example: if the reporting year is 2017 and a policyholder can only surrender partially at specific predefined dates in the future, eg. 2020, then do not include the number in the 2017 submission but in the 2020 submission.

- Potential surrender payment on insurance contracts containing bifurcated embedded derivatives.

This amount shall exclude:

- Policy loans;
- Any debt-like liabilities reported in Row 25.A relating to debt like instruments whose payments could be accelerated; and
- Deposits at banking subsidiaries.

For rows related to separate account/unit-linked (S) surrenders: If any funds paid upon surrender of a policy would come from another source besides the liquidation of assets solely attributable to that policyholder, those amounts should be classified as general account surrenders. This is the case even if liabilities receive separate account treatment in the accounting regime used in the other sections of the reporting Template. If the amount that can be surrendered for a SA policy is greater than the separate account/unit-linked assets for that policy, then the excess amount should be considered a general account surrender.

| | | Time restraints | | |
|--------------------------------------|---|---------------------------|---|------------------------------|
| | | Low (less than 1 week) | Medium (between 1 week and 3 months) | High (more than 3 months) |
| Economic penalty⁵² | Low (33.A.1) (no economic penalty) | 33.A.1.1 | 33.A.1.2 | 33.A.1.3 |
| | Medium (33.A.2) (less than 20% economic penalty) | 33.A.2.1 | 33.A.2.2 | 33.A.2.3 |
| | High (33.A.3) (more than 20% economic penalty) | 33.A.3.1 | 33.A.3.2 | 33.A.3.3 |

Note: each of the cells in the above matrix are mutually exclusive.

Row 33.A: Aggregate total of full surrender value / cancellation refunds (Sum of 33.A.1, 33.A.2, and 33.A.3) (on pro rata basis if policy is cancelled) ■ ■

⁵² For the purposes of this exercise, the value of the Economic Penalty should only include contractual penalties (ie. surrender charges) imposed by the insurer on policyholders that surrender early. It should not include penalties that are imposed by third parties, or are not explicitly quantified in the contract, such as the economic value of foregone benefits.

Row 33.A.1: of which is available without economic penalty (Sum of Rows 33.A.1.1, 33.A.1.2 and 33.A.1.3). ■ ■

Row 33.A.1.1: of which is available without time restraints or with time restraints of less than a week (Subset of Row 33.A.1). ■ ■

Row 33.A.1.1.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.A.1.1). □ ■

$$33.A.1.1.S \leq 33.A.1.1$$

Row 33.A.1.2: of which is available within 3 months (Subset of 33.A.1; exclude amounts reported in Row 33.A.1.1). ■ ■

Row 33.A.1.2.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.A.1.2). □ ■

$$33.A.1.2.S \leq 33.A.1.2$$

Row 33.A.1.3: of which is available after 3 months. (Subset of Row 33.A.1) ■ ■

Row 33.A.1.3.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.A.1.3). □ ■

$$33.A.1.3.S \leq 33.A.1.3$$

Row 33.A.2: of which is available with an economic penalty less than 20% and more than 0% (Sum of Rows 33.A.2.1, 33.A.2.2 and 33.A.2.3). ■ ■

Row 33.A.2.1: of which is available without time restraints or with time restraints of less than a week (Subset of Row 33.A.2). ■ ■

Row 33.A.2.1.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.A.2.1). □ ■

$$33.A.2.1.S \leq 33.A.2.1$$

Row 33.A.2.2: of which is available within 3 months. (Subset of Row 33.A.2; exclude amounts reported in Row 33.A.2.1). ■ ■

Row 33.A.2.2.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.A.2.2).

33. A. 2. 2. S ≤ 33. A. 2. 2

Row 33.A.2.3: of which is available after 3 months. (Subset of Row 33.A.2).

Row 33.A.2.3.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.A.2.3).

33. A. 2. 3. S ≤ 33. A. 2. 3

Row 33.A.3: of which is available with an econ. penalty equal to or greater than 20%.

Row 33.A.3.1: of which is available without time restraints or with time restraints of less than a week (Subset of Row 33.A.3).

33. A. 3. 1. S ≤ 33. A. 3. 1

Row 33.A.3.1.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.A.3.1).

Row 33.A.3.2: of which is available within 3 months (Subset of Row 33.A.3; exclude amounts reported in Row 33.A.3.1).

Row 33.A.3.2.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.A.3.2).

33. A. 3. 2. S ≤ 33. A. 3. 2

Row 33.A.3.3: of which is available after 3 months. (Subset of Row 33.A.3).

Row 33.A.3.3.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.A.3.3).

33. A. 3. 3. S ≤ 33. A. 3. 3

For 33.A.7.a, 33.D and 33.E rows, retail policies refer to those directed by natural persons. This is in contrast to policies that are directed by businesses (non-retail or commercial). Terminology may vary by company, but for these rows amounts should be reported by whether a natural person or business makes the decision to surrender or cancel the policy or to take a

policy loan. In the liquidity metrics the IAIS is currently developing, separate haircuts may be applied by policyholder type.

Row 33.D: Surrender value by policyholder type ■ ■

Provide further detail of the surrender values reported in Rows 33.A.1.1 - 33.A.3.3 based on policyholder type, with additional information on surrender value stemming from retail policies⁵³.

Row 33.D.1.1: Amount reported in Row 33.A.1.1 attributable to retail policyholders. ■ ■

Row 33.D.1.1.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.D.1.1). ■

$$33.D.1.1.S \leq 33.D.1.1$$

Row 33.D.1.2: Amount reported in Row 33.A.1.2 attributable to retail policyholders. ■ ■

Row 33.D.1.2.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.D.1.2). ■

$$33.D.1.2.S \leq 33.D.1.2$$

Row 33.D.1.3: Amount reported in Row 33.A.1.3 attributable to retail policyholders. ■ ■

Row 33.D.1.3.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.D.1.3). ■

$$33.D.1.3.S \leq 33.D.1.3$$

Row 33.D.2.1: Amount reported in Row 33.A.2.1 attributable to retail policyholders. ■ ■

Row 33.D.2.1.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.D.2.1). ■

$$33.D.2.1.S \leq 33.D.2.1$$

Row 33.D.2.2: Amount reported in Row 33.A.2.2 attributable to retail policyholders. ■ ■

⁵³ Retail policies are defined as those written to a natural person, single individual or family unit rather than trade or business.

Row 33.D.2.2.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.D.2.2).

33. D. 2. 2. S ≤ 33. D. 2. 2

Row 33.D.2.3: Amount reported in Row 33.A.2.3 attributable to retail policyholders.

Row 33.D.2.3.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.D.2.3).

33. D. 2. 3. S ≤ 33. D. 2. 3

Row 33.D.3.1: Amount reported in Row 33.A.3.1 attributable to retail policyholders.

Row 33.D.3.1.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.D.3.1).

33. D. 3. 1. S ≤ 33. D. 3. 1

Row 33.D.3.2: Amount reported in Row 33.A.3.2 attributable to retail policyholders.

Row 33.D.3.2.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.D.3.2).

33. D. 3. 2. S ≤ 33. D. 3. 2

Row 33.D.3.3: Amount reported in Row 33.A.3.3 attributable to retail policyholders.

Row 33.D.3.3.S: of which are classified as separate account or unit-linked liabilities (Subset of 33.D.3.3).

33. D. 3. 3. S ≤ 33. D. 3. 3

Row 33.E: Unearned premiums

Report the value of premiums paid-in but not earned that the insurer is legally or contractually obligated to repay on request by the policyholder. In the explanatory statement, provide an overview of the terms of such repayments, including any applicable delays or contractually assessed penalties. For life contracts, this would often only apply to policies without cash

values. Prepaid premium or future premium deposit funds that increase policy surrender values or have a separate cash balance that can be withdrawn should be included in 33.A rows. **Do not include amounts that are included in 33.A rows.**

Row 33.E.1: Unearned premiums – business policyholders ■ ■

Report the part of 33.E that is for business (non-retail) policyholders.

Row 33.F: Additional payments due as the result of credit downgrade ■ ■

Report the maximum value of any additional payments, including collateral or margin that could be required in the event that the insurer or any subsidiary is downgraded or breaches any other covenant triggers based on financial health, other than credit ratings (covenants driven by regulatory capital levels, leverage ratios, etc.) Do not include amounts included in Rows 25.A or 25.B. This should reflect payments from all sources including reinsurance contracts. Please provide a description of these payments in the Explanatory Statement.

Row 33.F.1: two notches ■ ■

Row 33.F.2: to BB+ ■ ■

Row 33.F.3: to C ■ ■

Row 33.G: General Insurance Catastrophe Claim Payments: ■ □

Report an estimated outflow (including claims and related expenses) in the greater of a 1 in 250 global event across (PML 1/250) all general insurance perils and the catastrophic event(s) used by the insurer's internal liquidity monitoring [and/or] stress testing. Include all sources of payments from general (re)insurance contracts (for example, include payments made for death or injury under workplace liability contract.). Payments on stand-alone life (re)insurance contracts for death related to a catastrophic event may be excluded.

Row 33.G.1: Gross of reinsurance (PML 1/250) ■ □

Row 33.G.1.a: The amount in 33.G.1 that would be expected to be paid within one year of the start of the catastrophe scenario (PML 1/250) ■ □

Row 33.G.2: Net of reinsurance (PML 1/250) ■ □

Row 33.G.2.a: The amount in 33.G.2 that would be expected to be paid within one year of the start of the catastrophe scenario less any expected reinsurance recoveries received within the same time frame (PML 1/250). ■ □

Row 38.7a: Capital Received


Report capital funds received (during the reporting period) including dividends from subsidiaries, capital contributions, and other capital commitments.

Row 38.7b: Capital Paid


Report capital funds paid including shareholder and/or policyholder dividends, and capital contributions to subsidiaries.

Row 38.7.S: Shareholder dividends paid


Report the amount of all dividends paid to shareholders during the last 12 months.

Row 39.5: ILR Gross Derivative Liabilities


The calculation of ILR gross derivatives liabilities is performed by contractual netting set. A contractual netting set is the set of all contracts subject to master netting agreement. Derivative transactions not subject to a master netting agreement are their own contractual netting set.

ILR gross derivative liabilities is the sum of the netting sets that have negative replacement cost from the perspective of the insurer (i.e. the insurer's current position has a negative market value).

$$\sum_{\text{netting sets}} \max(-\text{gross replacement cost of derivatives in netting set}, 0)$$

Because of an insurer may have derivative assets and liabilities within a netting set and because this excludes derivatives held in separate accounts, this amount should be less than or equal to the value reported in 39.2.

$$39.5 \leq 39.2$$

Do not include the value of any bifurcated embedded derivatives related to insurance contracts. The liquidity risk on these products is assessed using Row 33. Include any bifurcated embedded derivatives that do not have a host insurance contract.

Do not include the value of any collateral cash or securities collateral pledged or received in the calculation of ILR Gross Derivatives Liabilities.

Row 39.6: ILR Eligible Cash Variation Margin


Report the value of any cash collateral provided to counterparties on ILR Gross Derivative Liabilities in the derivative's settlement currency. Exclude any amounts reported in row 9.4.

Row 39.9: Initial Margin ■ □

Report the fair value of the securities posted as initial margin by an insurer for derivatives contracts. Include the value of securities pasted as initial margin that are included in rows 9.5.x. Do not include any cash initial margin that is not reported in row 9.4.

Row 42.4: Repurchase agreements (gross) ■ ■

Gross fair value of recognised and non-recognised repurchase transaction liabilities (also called "securities sold under agreements to repurchase"). This is equal to the amount of cash and securities borrowed against securities collateral. Include all transactions regardless of whether or not the contract contains the right to resell, re-use or re-hypothecate the collateral (assets borrowed).

Row 42.4.S: Of those repurchase agreement liabilities in 42.4 which are conducted entirely from the separate account. Include amounts here only if all financial risks including financing collateral/margin are obligations solely of the separate account and not of the insurer.

□ ■**Row 43.4: Securities lending (gross)** ■ ■

Report the gross fair value of all recognised and non-recognised securities lending liabilities (ie. the amount of cash or fair value of non-cash collateral received from the counterparty in exchange for lending securities). Include all transactions regardless of whether or not the contract contains the right to resell, re-use or re-hypothecate the collateral.

Row 43.4.S: Of the securities lending liabilities in 43.4 which are conducted entirely from the separate account. Include amounts here only if all financial risks including financing collateral/margin are obligations solely of the separate account.

□ ■**Row 61.1.N: Net incurred claims (non-life only)** ■ □

Report the total value of all net claims (including all claim/loss related expenses - LAE) which incurred in the reporting year. Net incurred claims (including LAE) include direct and assumed business while deducting the ceded business.

Row 61.2.N: Net earned premium (non-life only) ■ □

Report the total value of net premium which was earned in the reporting year. Net earned premiums include direct and assumed business while deducting the ceded business.

Row 61.4.N: Expenses (non-life only) ■ □

Report the value of all expenses (excluding all claim/loss related expenses) which incurred in the reporting year. Do not include expenses reported under row 61.1 as loss adjustment expenses (LAE) in order to avoid double-counting. Expenses include direct and assumed business while deducting the ceded business.

Rows 69.1 and 69.2: Total net technical provision

Report total net (net of reinsurance) technical provisions which are held for the purpose of fulfilling insurance contracts (including policyholder dividends, funds held pursuant to reinsurance treaties, future policy benefits, policyholder account balances, loss reserves, asset valuation reserves and interest maintenance reserves related to insurance products, and unearned premiums reserves and excluding advance premiums received). Report values after considering any reinsurance contract or cession.

Provide net technical provisions split both life and non-life (including health) business lines. If the split is not readily available, please provide division on the best effort basis.

Annex 4: Federal Reserve Board's 2017 Supervisory Scenarios for Annual Stress Tests

The document “2017 Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules and the Capital Plan Rule” from February 10, 2017 contains settings of three types of scenarios (and their parameters) that are applied in the US for annual stress tests:

- Baseline scenario
- Adverse scenario
- Severely adverse scenario

Insurers participating in the IIM may use these parameters and scenario settings in the calculation of their stressed cash inflows and outflows under the company projection approach (CPA).

The Dodd-Frank Wall Street Reform and Consumer Protection Act requires the Board of Governors of the Federal Reserve System (Board) to conduct an annual supervisory stress test of bank holding companies (BHCs) with \$50 billion or greater in total consolidated assets (large BHCs), and to require BHCs and state member banks with total consolidated assets of more than \$10 billion to conduct company-run stress tests at least once a year.

This document describes the three supervisory scenarios: baseline, adverse, and severely adverse that the Board will use in its supervisory stress test for this stress test cycle; that a BHC or state member bank must use in conducting its annual company run stress test; and that a large BHC must use to estimate projected revenues, losses, reserves, and pro forma capital levels as part of its 2017 capital plan submission.

The document also details additional components that certain BHCs will be required to incorporate into the supervisory scenarios: the global market shock component and the counterparty default component.

The adverse and severely adverse scenarios describe hypothetical sets of conditions designed to assess the strength of banking organisations and their resilience to adverse economic environments. The baseline scenario follows a profile similar to the average projections from a survey of economic forecasters. The scenarios are not Federal Reserve forecasts.