

Holistic Framework for Systemic Risk in the Insurance Sector

Global Monitoring Exercise

June 2023

This is the older version. Please click [here](#) for the latest version.

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.

For more information, please visit www.iaisweb.org and follow us on LinkedIn: [IAIS – International Association of Insurance Supervisors](#).

International Association of Insurance Supervisors
c/o Bank for International Settlements
CH-4002 Basel
Switzerland
Tel: +41 61 280 8090

This document is available on the IAIS website (www.iaisweb.org).

© International Association of Insurance Supervisors (IAIS), 2023.

All rights reserved. Brief excerpts may be reproduced or translated provided the source is stated.

Contents

Acronyms.....	5
1 Introduction.....	6
2 Objective of the Global Monitoring Exercise.....	7
2.1 Individual Insurer Monitoring.....	8
2.2 Sector-Wide Monitoring	8
2.3 Regular review	9
2.4 Process of the Global Monitoring Exercise	9
3 Monitoring categories.....	11
3.1 Overview of SWM and IIM categories.....	11
3.2 Mapping between SWM and IIM.....	13
4 Data collection.....	14
4.1 Scope of the data collections	14
4.1.1 IIM scope of data collection: Insurer Pool selection	14
4.1.2 SWM scope of data collection	14
4.2 Data collection preparation and launch	15
4.3 Data validation	15
5 Assessment of systemic risk.....	16
5.1 IIM assessment of systemic risk	16
5.1.1 Absolute assessment approach	17
5.1.2 Relative rankings	17
5.1.3 Cross-sectoral analysis	17
5.1.4 Trend developments	18
5.1.5 Ancillary risk indicators	18
5.2 SWM assessment of systemic risk.....	18
5.2.1 Quantitative assessment	19
5.2.2 Qualitative assessment	19
5.3 Interplays between SWM and IIM.....	19
6 Feedback loop with IAIS Members and stakeholders	21
6.1 Feedback loop with IAIS Members	21
6.2 Roundtable discussions with external stakeholders	21
7 IAIS collective discussion	22
7.1 Criteria related to IIM	22
7.2 Sector-Wide Monitoring	23
7.3 Content of the collective discussion.....	23
7.4 Outcome of the collective discussions	24
8 Reporting	25

8.1	Reporting to participating insurers	25
8.2	Reporting to IAIS Members and participating jurisdictions.....	25
8.3	Reporting to FSB	25
8.4	Reporting to the public.....	27
<i>Annex: Detailed explanation of changes to IIM assessment methodology for 2023-2025</i>		<i>28</i>

Acronyms

ARV	Absolute Reference Value
BCBS	Basel Committee on Banking Supervision
FSB	Financial Stability Board
GIMAR	Global Insurance Market Report
GME	Global Monitoring Exercise
GRMS	Global Reinsurance Market Survey
G-SIB	Global Systemically Important Bank
G-SII	Global Systemically Important Insurer
IAIG	Internationally Active Insurance Group
IAIS	International Association of Insurance Supervisors
ICP	Insurance Core Principle
IFA	Intrafinancial assets
IFL	Intrafinancial liabilities
IIM	Individual Insurer Monitoring
KIRT	Key Insurance Risks and Trends
LL	Liability Liquidity
OTC	Over the counter
SFT	Securities Financing Transactions
STF	Short term funding
SWM	Sector-Wide Monitoring

1 Introduction

1. To support its mission of effective and globally consistent supervision to protect policyholders and to contribute to global financial stability, the International Association of Insurance Supervisors (IAIS) adopted in November 2019 the Holistic Framework for the assessment and mitigation of systemic risk in the global insurance sector (“Holistic Framework”), as described in the overarching document.¹

2. Following a review after three years of implementation, in December 2022 the Financial Stability Board (FSB), in consultation with the IAIS, has decided that the Holistic Framework provides a more effective basis for assessing and mitigating systemic risk in the insurance sector than the annual identification of Global Systemically Important Insurers (G-SIIs). The FSB in consultation with the IAIS therefore decided to discontinue the annual identification of G-SIIs in favour of using the IAIS Holistic Framework for the assessment and mitigation of systemic risk in the insurance sector (Holistic Framework) to inform its consideration of systemic risk in insurance.²

3. This document describes in more detail the objectives and process of the IAIS’ Global Monitoring Exercise (GME) and outlines the Individual Insurer Monitoring (IIM) assessment methodology for 2023-2025 following the public consultation³.

¹ See <https://www.iaisweb.org/page/supervisory-material/financial-stability>

² See <https://www.iaisweb.org/2022/12/fsb-endorses-the-iais-holistic-framework-and-discontinues-identification-of-global-systemically-important-insurers-g-siis/>

³ <https://www.iaisweb.org/2022/12/public-consultation-of-the-review-of-the-iim-assessment-methodology/>

2 Objective of the Global Monitoring Exercise

4. As a key element of the Holistic Framework, the GME serves to assess global insurance market trends and developments and to detect the possible build-up of systemic risk in the global insurance sector. This includes an annual assessment by the IAIS of potential systemic risk arising from sector-wide trends with regard to specific activities and exposures, but also the possible concentration of systemic risks at an individual insurer⁴ level (using an assessment methodology) arising from these activities and exposures.

5. The GME includes the following elements:

- Sector-Wide Monitoring (SWM);
- Individual Insurer Monitoring (IIM);
- Data analysis by the IAIS to assess any potential systemic risk stemming from a sector-wide or individual insurer level, considering also broad financial market developments;
- Collective discussion⁵ of the results of the assessment within the IAIS. This discussion has the following key aspects:
 - Assessment of trends and any systemic risks identified at a sector-wide level;
 - Consideration of trends in risks and increasing levels arising from potentially systemic activities and exposures concentrated in an individual insurer, that could ultimately have a global systemic impact in case of its distress or disorderly failure; and
 - Consideration of appropriate supervisory responses, including enhanced supervisory policy measures and/or powers of intervention, taking into account the assessment of those supervisory policy measures and/or powers of intervention that have already been implemented.
- Reporting to participating insurers, IAIS Members, the Financial Stability Board (FSB), and the public.

6. The GME supports the IAIS in its 2020-2024 Strategic Plan⁶, specifically High Level Goal 1: The IAIS assesses global market trends and developments in, or relevant to, the insurance sector and responds to issues that present opportunities, challenges and risks relevant to the IAIS' Mission. The GME is planned to continue to serve this role as part of the next IAIS Strategic Plan.

7. The Holistic Framework also allows for the introduction of a feedback loop between the global monitoring by the IAIS and macroprudential surveillance and supervision at the jurisdictional level. Vulnerabilities building up in certain jurisdictions may have cross-jurisdictional implications. Additionally, understanding jurisdictional and regional trends facilitates understanding of global trends.

⁴ Where this document refers to the term 'individual insurer' this is to distinguish clearly to risks stemming from individual insurers versus risks stemming from collective exposures and activities and does not refer to individual legal entities.

⁵ This collective discussion will take place in coordination with the relevant supervisor where an individual insurer is involved.

⁶ See <https://www.iaisweb.org/page/about-the-iais/strategic-plan>

2.1 Individual Insurer Monitoring

8. The IIM is aimed at assessing systemic risk stemming from an individual insurer's distress or disorderly failure, recognising that potentially systemic activities or exposures may become concentrated in an individual insurer, such that its distress or disorderly failure would pose a serious threat to global financial stability. The IIM is one of the two main components of the GME together with the SWM.

9. Under the Holistic Framework, an assessment methodology was adopted in 2019 and updated in 2023 to support this assessment. However, the assessment methodology is only one input to the broader IIM, see notably section 5.1 for a full overview of the analyses that form part of the IIM.

10. The IAIS initially developed a methodology for identifying global systemically important insurers (G-SIIs) in 2013. As stated therein, the assessment methodology is to be reviewed every three years in order to capture improvements noted by IAIS Members, developments in the insurance sector, changes in insurers' activities or products, growth in the global insurance markets, and improvements in methods and approaches for measuring systemic importance in the insurance sector and the broader financial sector.

11. Over 2022-2023 the IAIS reviewed the 2019 assessment methodology, as part of the three-year review cycle. An updated 2023 IIM assessment methodology, to be applied in the 2023-2025 GME, was adopted in March 2023 by the IAIS Executive Committee, following a public consultation⁷.

2.2 Sector-Wide Monitoring

12. The SWM is aimed at assessing sector-wide trends with regard to specific activities and exposures and consists of both qualitative and quantitative elements. It is a complement to the IIM, and both their outcomes will feed into the IAIS' assessment of systemic risk as well as in the IAIS collective discussion. The SWM brings together current and past IAIS efforts related to macroprudential surveillance and broader market surveillance, including the:

- IAIS Key Insurance Risk and Trends (KIRT) Survey: a voluntary, annual survey amongst IAIS Members about their qualitative assessment of risk⁸;
- IAIS Global Reinsurance Market Survey (GRMS)⁹: a data collection amongst relevant IAIS Members, the results of which are annually reported to the general public within the Global Insurance Market Report (GIMAR); and
- IAIS GIMAR: which provides an overview of trends and developments in global insurance markets along with a series of topical chapters which allow to develop a global view on relevant issues from the perspective of insurance supervisors.

⁷ <https://www.iaisweb.org/2022/12/public-consultation-of-the-review-of-the-iim-assessment-methodology/>

⁸ The KIRT was discontinued and replaced by the SWM qualitative component

⁹ The GRMS contains aggregate reinsurance data of all reinsurance entities in a jurisdiction on a solo entity level fulfilling one of the following minimum criteria ("GRMS criteria"):

- Gross unaffiliated reinsurance premiums assumed of at least US\$800 million (US\$20 million for monolines); or
- Gross unaffiliated technical reserves of at least US\$2 billion (not applied to monolines); or
- Aggregate gross notional amount in (re)insurance related derivatives of at least US\$500 million (for example in longevity or mortality swaps).

13. Combining these efforts allows the IAIS to gain a more holistic view on systemic risk and trends in global insurance markets.

14. The SWM enhances the existing IAIS macroprudential surveillance efforts and is facilitated by an annual data collection exercise that contains the following elements:

- Quantitative and qualitative information from IAIS Members, based on:
 - A quantitative data collection that aggregates data from legal entities operating in IAIS Member jurisdictions in specific categories; and
 - A qualitative information request that covers supervisors' assessments of macroprudential risks.
- Data collection by the IAIS Secretariat for other broad market and macroeconomic surveillance indicators, based on public sources.

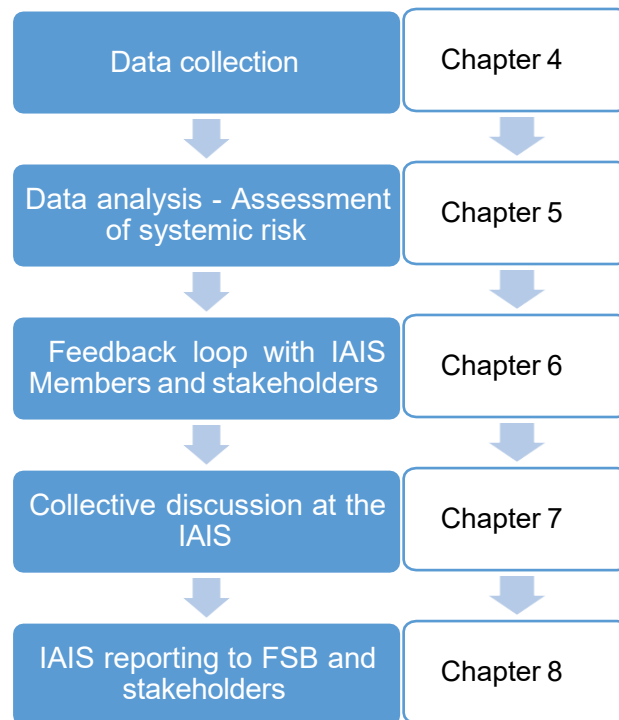
2.3 Regular review

15. As stated above, the GME will continue to evolve, including through a regular review of the IIM assessment methodology and the SWM every three years, in order to capture improvements suggested by IAIS Members, developments in the insurance sector, changes in insurers' activities or products, growth in the global insurance markets, and improvements in methods and approaches for measuring systemic importance in the insurance sector and the broader financial sector.

16. In addition, the IAIS will annually review and, if necessary, revise IIM and SWM data collections in order to continue to improve and streamline the data collections for upcoming years, taking into account the costs and benefits.

2.4 Process of the Global Monitoring Exercise

17. The GME follows the following process (each step is described in detail further in this memorandum):



3 Monitoring categories

3.1 Overview of SWM and ILM categories

18. The GME serves to assess relevant global insurance market trends and developments as well as the potential global build-up of systemic risk, by monitoring the following ten categories:

- Size
- Global activity
- Interconnectedness – Counterparty exposure
- Interconnectedness – Macroeconomic exposure
- Asset liquidation
- Substitutability
- Underwriting & Solvency
- Policyholder behaviour
- Emerging risks
- Economic environment

The rationale behind each of these categories is briefly described below.

Size

19. Size and global activity are not sources of risk on their own. However, they may work as risk amplifiers and are relevant in the assessment of systemic risk in the insurance sector.

20. The importance of a single component (a sector or an insurer) for the functioning of the financial system generally increases with the amount of financial services that the component provides. It should be recognised, however, that in an insurance context, size is also a requisite for the effective pooling and diversification of risks.

21. An insurer's distress or disorderly failure is more likely to damage the global economy or financial markets if its activities comprise a large share of the global insurance activity. The larger the insurer, the more difficult it may be for its activities to be quickly replaced by other insurers and, therefore, the greater the chance that its distress or disorderly failure could cause disruption to the financial markets in which it operates. The distress or disorderly failure of a large insurer is also more likely to damage confidence in the insurance system as a whole.

Global activity

22. This category is aimed at identifying components of the financial system whose failure can have large negative externalities on a global scale and to capture the components' global footprint. The international impact of an insurer's distress or disorderly failure is likely to vary in line with its global footprint. The greater its global reach, the more difficult it may be to coordinate its resolution and the more widespread the spill over effects from its failure.

Interconnectedness

23. Interconnectedness refers to interlinkages with other parts of the financial system and the real economy. Two main aspects of interconnectedness are counterparty exposure and macroeconomic exposure.

Interconnectedness – Counterparty exposure

24. Counterparty exposure refers to direct exposures between an insurer and other institutions, which lead to both institutions becoming vulnerable to the distress or disorderly failure of the other. Counterparty risk may become a concern, depending on various factors, such as the concentration of the exposures (both in absolute terms and relative to the insurer's balance sheet), the correlations of exposures across the insurance sector, and the type of counterparty (whether the counterparty itself is systemic). In some markets, insurers provide a significant source of funding and liquidity to the banking sector, through holdings of bank debt and loans of high-quality securities from their bond portfolio. Examples of direct exposures are asset holdings (such as debt or equity securities, derivatives, or other financial transactions) towards specific entities, sectors or asset classes such as other financial institutions or sovereign positions.

Interconnectedness – Macroeconomic exposure

25. One way that systemic risk can arise is through common exposures to macroeconomic risk factors across institutions, such as interest rates, FX rates, real estate and equity prices. In such cases, the underlying exposures are highly correlated with each other and with the market, limiting the potential to diversify through the pooling of idiosyncratic risks. If a firm's financial position is highly correlated with the broader economy, the systemic impact of failure increases.

26. Similarly, correlated exposures increase the probability of common behaviours of insurers, when they react to certain events. Insurers' common macroeconomic exposures increase the likelihood that many insurers will have correlated weaknesses, leading to correlated losses from other shocks and an increased potential for a "too many to fail" scenario. For example, a prolonged low interest rate environment could result in insurers offering unmatched guaranteed returns in search of better yields, potentially increasing their vulnerability to credit risk related shocks.

Asset liquidation

27. Asset liquidation is the sale of assets at a speed or scale that has the potential to exacerbate market movements and trigger losses for firms with similar holdings. One common cause of asset liquidation is the materialisation of liquidity risk.

28. Liquidity risk arises as a result of imbalances between liquidity sources and needs – for instance, liquidity needs can increase due to material policyholder lapse or increasing margin calls from derivative activities. It becomes a macroprudential concern if a shock (the trigger event) leads to reactions causing liquidity shortages in a particular sector.

29. If liquidity risk materialises for an insurer or a number of insurers, this could trigger a downward spiral in the financial markets. If insurers have to accept sizeable cuts on their asset values to satisfy outflows, they could face losses, and may even be forced to sell additional assets, which could aggravate the systemic impact. Through these price impacts, shocks could be transmitted to other parts of financial markets and the real economy by triggering write-downs on similar assets at other firms, distorting the signalling function of prices or impacting the ability of firms to fund activities.

Substitutability

30. The systemic importance of a single insurer increases in cases where it is difficult for other insurers of the financial system to provide the same or similar services on similar terms in the event of failure. The degree of concentration or competitiveness in the relevant market may give an indication of the risk of disruption of supply of insurance coverage in that market.

Underwriting & Solvency

31. This category is included to monitor underwriting and solvency risks, to provide insight into general trends and developments in the insurance sector, its resilience, profitability and other characteristics.

32. Wide-spread under-reserving, without the possibility to reprice, may also have a systemic impact due to correlated actions resulting from competitive markets, especially for long-term business of life insurance that is more difficult to price and adequately reserve for from the outset. New insurance businesses may expose companies to the risk of inadequate provisioning/mispricing due to the lack of expertise and/or lack of historical data. Underwriting contracts for which premium income does not adequately cover claims, or for which the assumptions used for the calculation of the provisions are not appropriate, may lead to distress at the insurer-level. Consequently, reactions of insurers may generate systemic impacts through wide-spread asset liquidation or reallocations, and/or the eventual collective failings of several insurers. This would also capture insurance exposures that may impact a significant part of the insured population, such as pandemic or long-term mortality trends.

Policyholder behaviour

33. This category is included for general monitoring of trends and developments in the insurance sector, focusing on indicators such as lapse rates or persistence.

Emerging risks

34. This category covers other emerging risks with potential systemic implications, which are not captured by the other categories and may emerge and accelerate in the near future. This category may include environmental developments and increasing cyber and FinTech activities that may increase the systemic risk footprint. This category includes, for example, climate risk, catastrophe risk, cyber risk and their impact on operational risk.

Economic environment

35. This category includes publicly available macro variables that may be used for broader macroprudential monitoring and analysis. The economic environment category captures, for example, GDP, employment and unemployment rates, population, labour force, wages development, productivity and labour costs, inflation and fiscal balances. Monitoring the economic environment is aimed to provide background and to support and facilitate the IAIS assessment of systemic risk. It may provide additional nuance, the environment in which insurers operate as well as provide insight in possible risks building up outside the insurance sector that may ultimately affect insurers.

3.2 Mapping between SWM and IIM

36. In order to allow for interplays between SWM and IIM, the IAIS maps the various indicators to the ten GME categories described above. The starting point for the data collection exercises are exposures that are identified as potentially systemic, as well as the transmission channels. For each of the categories, the GME analysis compares trends and developments at a sector-wide level versus individual insurer level and the Insurer Pool level. For some of the categories, this may be based on a more qualitative assessment, whereas for other categories, a quantitative comparison is made between activities and exposures within the Insurer Pool compared to the global sector-wide developments.

4 Data collection

37. The first step in the GME process is the data collection. The data collection consists of a preparatory phase, including defining the scope of the data collections, the actual collection of data, as well as the data validation.

4.1 Scope of the data collections

4.1.1 IIM scope of data collection: Insurer Pool selection

38. Insurers that meet at least one of the following criteria are eligible for inclusion in the Insurer Pool, from which data will be collected – subject to the provisions in paragraph 37:

- Total assets of more than USD 65 billion and a ratio of premiums from jurisdictions outside the home jurisdiction to total premiums of 5% or more; or
- Total assets of more than USD 215 billion and a ratio of premiums from jurisdictions outside the home jurisdiction to total premiums greater than 0%.

The above-mentioned criteria are tested on a group level, including all insurance and non-insurance subsidiaries.

39. In exceptional circumstances that are analytically supported, the IAIS and relevant authorities may choose not to collect data from an insurer that otherwise meets the criteria, or to collect data from an insurer that does not meet the criteria, to allow a more representative Insurer Pool for systemic risk analysis.

40. In addition, if a certain jurisdiction has no or a limited amount of insurer(s) represented in the Insurer Pool, the supervisor is encouraged to apply supervisory discretion to include insurers into the Insurer Pool, in particular for insurance groups approaching 65 billion in total assets, in order to enhance the regional balance and diversity of the IIM.

4.1.2 SWM scope of data collection

41. The SWM relies on aggregated data from legal entities operating in IAIS Member jurisdictions. Participation in the SWM is open to all IAIS Members. For the purpose of monitoring global trends, there needs to be sufficient coverage of the global insurance sector. Therefore, at least IAIS Members whose insurance or broader financial markets play a significant role in the global financial system are participating in the exercise.

42. As a result, the following criteria allow for broad coverage in terms of global participation:

- The jurisdiction is a member of the FSB; or
- The jurisdiction is a home jurisdiction of at least one Internationally Active Insurance Group (IAIG) and/or of an Insurer Pool participating insurer.

These jurisdictions together account for a global market share of more than 85% percent of gross written premiums, based on 2021 data.

43. As regards the scope within a jurisdiction, it is expected that a jurisdiction provides reasonable coverage and a representative sample (for example, in terms of business models or risk profiles). For jurisdictions new to the SWM data collection exercise, it is expected that the overall data coverage may increase over the first years. A minimum reasonable coverage is assumed to be the greater of:

- At least the top three insurers; or
- At least 60 percent of the local insurance market.

4.2 Data collection preparation and launch

44. The IAIS prepares annually an IIM and SWM data collection package. The data collection packages include:

- IIM and SWM¹⁰ Templates;
- IIM and SWM Technical Specifications; and
- IIM Explanatory Statements.

4.3 Data validation

45. Before conducting data analysis, data validation takes place of both IIM and SWM data.

46. IIM participating insurers and SWM participating jurisdictions are requested to validate data as much as possible before submitting the Templates. In addition, to streamline the data validation process, participating insurers and jurisdictions are requested to provide explanations for material year-over-year changes through for example the IIM/SWM Dashboard sheets, Liquidity Metrics sheet and/or the Explanatory Statement.

47. Further data validation by the IAIS includes but is not limited to:

- Year-over-year analysis of insurers' data;
- Year-over-year analysis of supervisors' data;
- Year-over-year analysis of IIM indicator scores;
- Comparison of insurers' data with annual reports and other publicly available sources of data; and
- Peer reviews and analysis of IIM indicator scores drivers.

¹⁰ SWM Template consist of various components (eg. Qualitative, quantitative or reinsurance).

5 Assessment of systemic risk

48. The second step in the GME process is the assessment of the build-up of potential systemic risk.

5.1 IIM assessment of systemic risk

49. The IIM assessment is no longer focussed on identifying prospective G-SIIs, but rather aims to support a comprehensive assessment by the IAIS on the potential build-up of systemic risk in the insurance sector as a whole by looking at potential systemic risk from activities or exposures concentrated in individual insurers. The assessment includes:

- Individual absolute assessment: scores of individual insurers are calculated based on an absolute indicator-based methodology;
- Individual relative assessment: scores of individual insurers are calculated based on a relative indicator-based methodology;
- Cross-sectoral analysis, comparing the systemic footprint of individual insurers and the Insurer Pool with that of banks;
- Trend developments within the Insurance Pool; and
- Ancillary indicators, such as liquidity risk metrics.

50. The IIM assessment methodology is an indicator-based methodology used for calculating systemic risk scores both on an absolute and relative basis. The 2023 IIM assessment methodology is based on data collected from five categories that include 13 indicators outlined in table 1 below. In the 2023 assessment methodology one indicator was dropped compared to the 2019 assessment methodology, being the financial guarantees indicator (in the interconnectedness category). As a result, the 2023 indicator weights were reweighted proportionally in order for the total weights to sum back to 100%.

Category	Indicator	2019 weights (for GME 2020-2022)	2023 weights (for GME 2023-2025)
Size	1 Total assets	2.50%	2.76%
	2 Total revenues	2.50%	2.76%
Global activity	3 Revenues outside of home country	2.50%	2.76%
	4 Number of countries	2.50%	2.76%
Interconnectedness	5 Intra-financial assets	9.40%	10.43%
	6 Intra-financial liabilities	9.40%	10.43%
	7 Derivatives	9.40%	10.43%
	8 Derivatives Trading	9.40%	10.43%
	9 Financial guarantees	9.40%	0.00%
	10 Minimum guarantees on variable products	9.40%	10.43%
Asset liquidation	11 Short term funding	9.40%	10.43%

	12 Level 3 assets	9.40%	10.43%
	13 Liability liquidity	9.4%	10.43%
Substitutability	14 Premiums for specific business lines	5.00%	5.52%
Sum of weights		100.00%	100.00%

Table 1. 2023 assessment methodology categories, indicators and weights

5.1.1 Absolute assessment approach

51. Following the validation of data, for each insurer in the Insurer Pool, the IAIS calculates an indicator-based overall quantitative score. These scores are based on the individual scores for each of the 13 indicators, which are multiplied by the respective weights and, where applicable, are multiplied by absolute reference values and then summed to an overall quantitative score for each insurer. The individual quantitative assessment provides an initial quantitative ranking of the systemic importance.

52. The IIM assessment methodology is predominantly based on an absolute assessment approach (ie calculating scores of insurers against a fixed benchmark based on the sample total in a defined base year). With this absolute approach, scores should better reflect changes in the systemic footprint of each insurer within the sample, compared to previous assessment methodologies which were based on a relative assessment approach. The base year for the absolute methodology is set using denominators from the data exercise year 2018.

Absolute reference values

53. ARVs were introduced in the 2016 assessment methodology as an additional factor to better assess systemic importance of the Insurer Pool within the broader insurance sector or financial system. For example, under the 2013 assessment methodology, each insurer's score for a particular indicator was calculated by dividing the individual insurer amount by the aggregate amount summed across all insurers in the sample. ARVs are derived from financial market totals and create a scaling factor, which is multiplied by the weight of each of the three indicators to better measure systemic importance.

54. For 2023-2025, there will be one ARV used and monitored: an ARV for the derivatives trading indicator. This ARV that is applied to calculate the scores for the derivatives trading indicator is fixed based on its year-end 2017 value. This amounts to an ARV for derivatives trading of 16.06%. The IAIS will, however, continue to closely monitor the overall developments in these markets and any significant increase in activity and reconsider the ARVs as part of the regular reviews of the methodology.

5.1.2 Relative rankings

55. Relative rankings continue to be calculated as information input for the collective discussions. Relative rankings are calculated using the updated indicators and weighting from the 2023 assessment methodology as described above, but using the denominators of the relevant exercise year.

5.1.3 Cross-sectoral analysis

56. Cross-sectoral analysis is aimed at comparing the systemic footprint of insurers with other components of the financial system, notably banks. Such analysis includes the comparison of scores of insurers and banks using common indicators. The Basel Committee on Banking

Supervision's (BCBS's) Global Systemically Important Bank (G-SIB) exercise provides a useful benchmark for performing such analysis. It is generally accepted that banks may be systemic, and therefore, a comparison to systemic banks provides a useful baseline to assess insurers.

57. The G-SIB methodology includes 12 indicators, spread across five categories. A bank's indicator score is calculated as its market share of each indicator (relative assessment approach is used) and its total quantitative score is a weighted average of the indicator scores. Any firm scoring above 130 is identified as a G-SIB (with limited scope for exclusion).¹¹

58. Comparison of the insurance scores to the banking scores is possible using common indicators for which data is also collected as part of the IIM. Because this analysis relies only on some indicators in both methodologies, this is only a partial comparison. As part of the IIM, the IAIS will compare trends between the Banking and Insurer Pools as a whole, as well as analyse the relative systemic footprint of individual insurers versus banks.

5.1.4 Trend developments

59. Trend analysis continues to be performed and used as information input for the overall assessment. Trend analysis includes developments of denominators (for each quantitative indicator), drivers of those developments, identification of outliers and data issues, and impact analysis of foreign exchange rates or sample fluctuations. Trend analysis covers also a comparison of individual insurers' versus Insurer Pool developments.

5.1.5 Ancillary risk indicators

60. To further aid the assessment of systemic risk in the global insurance sector, the IAIS can make use of ancillary indicators in its analysis. Ancillary indicators do not affect the total individual quantitative score. However, they may provide additional context that can inform the overall assessment.

61. In November 2022 the IAIS has completed the development of the first IIM ancillary indicator consisting of liquidity metrics, following two public consultations, one interim in 2020 and one final consultation in 2021¹². These liquidity metrics serve as a tool for the IAIS to assess insurers' liquidity exposures. They are not a binding requirement, but rather a monitoring tool, and help identify trends in insurer and insurance- sector liquidity.

62. Going forward the IAIS will develop further ancillary indicators, notably with respect to credit risk, derivatives and reinsurance. The IAIS may consider developing other ancillary indicators, based on the evolution of the risk profiles of insurers and the potential contribution to assessing the build-up and transmission of systemic risk.

5.2 SWM assessment of systemic risk

63. The SWM data analysis aims to assess the key risks and trends in the global insurance sector, considering the underlying drivers. For the purpose of the Holistic Framework, the SWM assessment focusses on the identification of systemic risk.

64. The IAIS will carry out assessment of the sector using the above mentioned data sources with focus on the above mentioned GME categories and their interrelations.

¹¹ More details on the G-SIB methodology can be found [here](#).

¹² <https://www.iaisweb.org/2022/11/iais-finalises-liquidity-metrics-as-an-ancillary-indicator-for-its-global-monitoring-exercise/>

65. The assessment of the sector includes at least:

- Quantitative assessment;
- Qualitative assessment; and
- Trend analysis.

5.2.1 Quantitative assessment

66. The quantitative assessment will use various statistical methods, including:

- Data coverage analysis;
- Level and trend analysis; and
- Interrelation between insurance and macroeconomic developments.

5.2.2 Qualitative assessment

67. The qualitative assessment allows for a forward-looking supervisory assessment of the key risks and trends in their respective insurance sector.

68. Supervisors assess the prioritisation of risks, the evolution (how the risk has changed over the year) and the outlook (how the risk is expected to develop over the next two years).

69. Next to the key risks, supervisors also assess the key developments in their insurance sector, for example regarding solvency, profitability and liquidity, and elaborate on the key measures taken and planned to be taken.

5.3 Interplays between SWM and IIM

70. To allow for an integrated view on the possible build-up of systemic risk in the global insurance sector, there is a need to combine the outcomes of the SWM and IIM data collections.

71. The two data collections can be complementary, as both target the same risks but from a different perspective. The outcomes of the SWM data collection, which is expected to cover more than 85% of the global insurance market in terms of gross written premiums, can provide a broad overview of trends, complemented by data collected from around 60 insurers in the Insurer Pool of the IIM, which is expected to cover approximately 25% of the global insurance market in terms of gross written premiums.

72. The IIM complements the SWM by providing insights into the level of concentration of risks or potential outliers at the level of most significant players in the insurance sector. It also allows a deeper dive into potentially emerging risks and trends identified through the SWM.

73. Looking at sector-wide and individual insurers' trends adds the necessary forward-looking perspective and also includes the assessment of outliers (ie insurers whose exposures develop in a different direction or at a faster pace than those of peers). Increased levels of exposure and activity, both at the sector-wide and the individual insurer level, also require careful attention. Even in the absence of an individual insurer whose distress or disorderly failure would pose a serious threat to global financial stability, high levels of concentration of certain activities or exposures among several individual insurers or within a number of jurisdictions may lead to more correlated behaviour.

74. External data, which is one of the data sources of the GME, enables the IAIS to perform basic checks, for instance of the representativeness of the Insurer Pool and of the SWM participants in terms of gross written premium.

75. Macroeconomic surveillance indicators and data elements enable the IAIS to link insurance markets developments with the general macroeconomic outlook of the global economy.

6 Feedback loop with IAIS Members and stakeholders

76. The third step of the GME is the feedback loop with IAIS Members and stakeholders.

6.1 Feedback loop with IAIS Members

77. Assessments from supervisors continue to be performed and used as information input for the overall assessment. These supervisory assessments are performed notably for those insurers that demonstrate a significant level and/or a trend of increasing potential (global) systemic impact from their distress or disorderly failure.

78. These assessments are partly based on targeted information from the relevant supervisor, when relevant in coordination with other involved supervisors, on its assessment of risk, any major developments post reporting date, as well as the supervisory response to the build-up of potential systemic risk.

6.2 Roundtable discussions with external stakeholders

79. The IAIS is committed to continue the dialogue with stakeholders on issues relevant to the sector, including financial stability. To this end, the IAIS plans to have roundtable discussions with relevant stakeholders such as Chief Risk Officers, investors and rating agencies on sector developments to facilitate information exchanges and discussions.

80. The roundtable discussions are intended to be held annually and encourage external stakeholders to share their positions and sector insights.

7 IAIS collective discussion

81. The fourth step in the GME process is the IAIS collective discussion.

82. The collective discussion is a platform for IAIS Members to form a collective view on the assessment of systemic risk in the global insurance sector, detect the build-up of systemic risk, and discuss the appropriate supervisory response to systemic risk if it arises. Both the SWM and IIM are key inputs into the IAIS assessment of systemic risk in the global insurance sector and will feed into the collective discussion.

83. The following subsections provide more details on the IIM and SWM inputs to the collective discussion.

7.1 Criteria related to IIM

84. The following criteria are used to assist the IAIS in the determination of the focus of the IIM assessment, as one input to the collective discussion. These criteria are updated in 2023 in line with changes to the calculation of the IIM indicators. The level criterion is aimed at indicating an actual threat to global financial stability, whereas the trend and outlier criteria are more forward-looking in nature to indicate the build-up of potential systemic risks. Lastly, the use of quantitative criteria is complemented by expert judgement, acknowledging the dynamic nature of systemic risk.

Level

85. The IAIS uses a predetermined level criterion based on the scores under the absolute methodology to provide an indication of a situation in which potentially systemic activities or exposures become concentrated in an individual insurer, such that its distress or disorderly failure would pose a serious threat to global financial stability. This level of systemic risk is expressed by an insurer's total score.

Trends

86. Trend criteria are intended to identify and monitor significant score movements in one or more indicators. This can be done by looking at total or indicator score increases.

87. Trend criteria focus on significant year-on-year, or multi-year, percentage or basis point increases in the total score of the absolute assessment methodology, or of at least a certain number of indicators. What constitutes a "significant" increase may depend on circumstances, but also on the total score itself. Therefore, it may be considered to use lower percentage increases for insurers with a relatively high score and higher percentage increases for lower scoring insurers.

Outliers

88. Outlier criteria are aimed at monitoring how activities and exposures of individual insurers develop compared to the Insurer Pool or the sector as a whole (based on the SWM). For instance, significant movements of individual insurers' total or indicator scores against the aggregate trend, or in excess of that trend, may trigger further exploration. Examples of outlier criteria that are considered include certain absolute increases in a single indicator, or increases that are at least a certain amount times higher than the median increase.

Materiality criterion

89. Both the trend and outlier criteria are used subject to a materiality criterion. This is intended to exclude insurers with a very low overall score or exposure, for which a small absolute change results in a significant relative change due to the low starting level of an activity, which does not necessarily warrant discussion at the IAIS level.

Expert judgement

90. Finally, expert judgement is used to acknowledge that relevant developments may be overlooked when only using a defined set of quantitative criteria, given the dynamic nature of systemic risk. Expert judgement may be more qualitative in nature, informed by major business changes or outcomes of the SWM and cross-sectoral analysis. This may also relate to a situation in which an insurer approaches the level criterion but has not yet breached it.

7.2 Sector-Wide Monitoring

91. Another key input to the collective discussion is the outcome of the SWM by highlighting the potential build-up of systemic risk stemming from activities or exposures from a sector-wide perspective, as well as by putting the outcomes of the IIM into a broader context.

92. The assessment includes at least:

- Quantitative assessment of sectors and activities that could pose a systemic risk;
- Qualitative assessment of sectors and activities, based on the IAIS Members' forward-looking assessment of key insurance risk and trends within their jurisdictions;
- Trend analysis, which monitors evolutions of the risk indicators over time; and
- Interplays with the IIM.

7.3 Content of the collective discussion

93. The collective discussion includes a forward-looking exploration of the assessment of systemic risk in the global insurance sector, both from the sector-wide and individual insurer perspective.

94. This includes a discussion on any identified significant growth in certain markets or activities, or of a specific insurer (or insurers) that shows significant increases or concentrations in activities and exposures. IAIS Members and relevant supervisors will be asked to share their findings on the trends or levels identified within their jurisdiction or at the level of individual insurers with a focus on potentially systemic activities, how they assess the potential systemic risk, and on the supervisory response to address the build-up of potential systemic risk, including supervisory policy measures (enhanced supervisory policy measures and/or powers of intervention) already applied or under consideration. This discussion will be supported by the outcomes of the IAIS' assessment of the implementation of the Holistic Framework supervisory material.

95. Should there be a situation in which potentially systemic activities or exposures become concentrated in an individual insurer such that its distress or disorderly failure would pose a serious threat to global financial stability, then the discussion would become more intensive. As outlined in section 7.1, this may be indicated by an insurer approaching or breaching the level criterion. The focus of the discussion is not necessarily on exploring and assessing potential risks, but more so on discussing supervisory responses to address the identified risk.

7.4 Outcome of the collective discussions

96. The outcome of the discussion can be twofold:

- A common IAIS view on the assessment of current and potential future systemic risk in the global insurance sector. Where applicable, this may highlight certain identified risks, which could be at the level of a certain activity, exposure, region or individual insurer.
- Any recommendations for follow-up, which may entail:
 - Recommendations for further analysis at the level of the IAIS, which can be both qualitative and quantitative in nature, to better understand certain identified trends, which can include ad-hoc data collections or a deep dive into a certain identified risk. Outcomes of this analysis may then be shared externally for instance via a topical chapter in the next edition of the (enhanced) GIMAR;
 - Recommendations for developing targeted supervisory or supporting material to help supervisors address specific activities or exposures, or possible additional supervisory capacity building or information sharing fora to share lessons on effective supervisory practices; and/or
 - Considerations on the application of certain enhanced policy measures or powers of intervention to a specific insurer, while recognising that the application of supervisory policy measures and intervention is ultimately the responsibility of the relevant supervisor.

8 Reporting

97. The fifth and final step in the GME process is the reporting to internal and external stakeholders.

98. The IAIS continues to be committed to enhancing transparency and will therefore continue to provide disclosures to the general public, insurers participating in the IIM and jurisdictions participating in the SWM.

8.1 Reporting to participating insurers

99. Following the finalisation of each annual exercise, the IAIS makes an insurer specific report for each participating insurer¹³ in the IIM including the following elements:

- The insurer's score on each of the quantitative indicators; and
- For each quantitative indicator, descriptive statistics including the median scores, standard deviation, and quartiles of the scores distribution.
- Trend analysis for key data rows, for example with respect to assets, liabilities, off-balance sheet items, revenues and global activity, borrowing and reinsurance, assets and liabilities composition, solvency, profitability and liquidity.

8.2 Reporting to IAIS Members and participating jurisdictions

100. The outcome of the GME can be a valuable input to the entire IAIS Membership and will therefore not only be shared with the Members that participated in the IIM and/or SWM, but with all IAIS Members.

101. The IAIS aims to provide group-wide supervisors with insight into how the individual insurers' risk scores relate to the Insurer Pool score. Descriptive statistics, including the median scores and the distribution of scores within the Insurer Pool, could be shared.

102. Following the finalisation of each annual exercise, the IAIS makes a jurisdictional specific report for each participating jurisdiction¹⁴, providing insight into how key risks and trends in their jurisdiction(s) compare to the regional and global insurance sector based on the SWM data (eg on assets and liabilities composition, solvency, liquidity, profitability, credit quality of assets, emerging risks).

8.3 Reporting to FSB

103. The reporting to the FSB will help provide an insurance sector perspective for the FSB's broader, cross-sectoral assessment of global financial stability.

104. Following the FSB endorsement of the Holistic Framework in November 2022, the FSB, as the international body that monitors and makes recommendations about the global financial system, will continue to receive from the IAIS an annual update on the outcomes of its GME, including potential concentration of systemic risks at an individual insurer and sector-wide level

¹³ PIR – Participating insurer report

¹⁴ PJR – Participating jurisdictional report

and the supervisory response to identified risks. Going forward the FSB will utilise assessments available through the Holistic Framework to inform its considerations of systemic risk in the insurance sector.¹⁵

105. The annual confidential report to the FSB will contain at least the following elements:

Individual Insurer Monitoring

106. Information will be provided at an Insurer Pool and individual insurer level. This will include at least the outcomes of:

- Rankings and scores of individual insurers within the Insurer Pool, calculated based on the updated absolute and relative indicator-based methodology;
- Cross-sectoral analysis, comparing the systemic footprint of individual insurers and the Insurer Pool with that of banks;
- Trend developments within the Insurer Pool;
- Application of the criteria for a collective discussion; and
- Qualitative assessments where applicable.

Sector-Wide Monitoring:

107. Information will be provided at a global, regional and jurisdictional level, aimed at assessing potential systemic risk arising from sector-wide trends with regard to specific activities and exposures. This would include at least the outcomes of:

- Quantitative assessment of exposures and activities that could pose a systemic risk, including assessment of systemic exposures and transmission channels;
- Qualitative assessment of sectors and activities, based on the IAIS Members' forward-looking assessment of key insurance risk and trends within their jurisdictions;
- Trend analysis, aimed at monitoring the evolution of the risk indicators over time; and
- Interplays with the IIM, including highlighting any developments counter to the aggregate trend or in excess of that trend.

Collective discussion:

108. Information to be provided on collective discussions include:

- Outcomes of the discussion on the assessment of current and potential future systemic risk in the global insurance sector, at an individual insurer and sector-wide level;
- Outcomes of the discussion on the regulatory and supervisory treatment of these risks, including on the supervisory policy measures already applied at an individual insurer and/or sector-wide level, as well as any additional measures under consideration, taking into account the outcomes of the IAIS' assessment of implementation of the Holistic Framework at a jurisdictional level; and
- Any agreed recommendations as a result of the collective discussion, which may include follow-up analysis by the IAIS, the development of supervisory or supporting material by the IAIS, or considerations on the application of certain enhanced policy measures and/or powers of intervention to a specific insurer, while recognising that the application of supervisory policy measures and intervention is ultimately the responsibility of the relevant supervisor.

¹⁵ See <https://www.iaisweb.org/uploads/2022/12/IAIS-Press-Release-Holistic-Framework-2022.pdf>

8.4 Reporting to the public

109. Public reporting will contain both a general description of developments in the global insurance sector and the outcomes of the GME as a whole (ie the IAIS assessment of the potential build-up of systemic risk in the global insurance sector). The report will provide information on trends, outliers, activities and potential discussions on observations, but without any information on the identity of individual insurers.

110. The section on the outcomes of the IIM will at least include information on:

- The aggregate totals for each indicator;
- Formulas used for calculation of indicator scores;
- The absolute reference values used for the indicators;
- The data template and instructions used in that year's assessment process; and
- An analysis of aggregate trends in the Insurer Pool

111. The section on the outcomes of the SWM will at least include:

- Trends and developments in the global insurance market from a macroprudential supervisory perspective, focusing on the recent performance of the sector as well as key risks faced by it;
- Trends and developments in the broader financial system and real economy, to provide additional nuance on the assessment of systemic risk by understanding the environment in which insurers operate and by providing insights to possible risks building up outside the insurance sector that may ultimately impact insurers; and
- Any findings on the possible build-up of systemic risk in certain markets or activities at a global insurance sector level.

Annex: Detailed explanation of changes to IIM assessment methodology for 2023-2025

112. Overall, the 2019 IIM assessment methodology has been found to deliver robust results over the 2019-2022 period, hence no substantial changes were made as part of the three-year review. The review focused on the granularity and consistency of reporting of certain indicators. As outlined above the development of additional ancillary indicators will also be taken forward, in order to further improve the effectiveness of the monitoring.

113. The IAIS received input to the three-year review of the IIM assessment methodology through the public consultation which was held between 6 December 2022 and 6 February 2023. Overall, the consultation comments generally supported the limited proposed changes. The detailed resolution of comments is published on the public consultation page [here](#).

114. In summary, key changes to the 2019 assessment methodology which will apply for the GME 2023-2025 entail:

- Updating of the Insurer Pool selection criteria (see section 4.1);
- Removal of the financial guarantees indicator;
- Indicator reweighting (see section 5.1);
- Updating currency exchange rates used in the calculation of IIM indicator and total scores to a three-year rolling average to reflect currency exchange rate changes over time;
- Enhancing the monitoring of credit risk using an ancillary indicator;
- Fixing of the rescaling factor between liability liquidity and short-term funding indicators and its ongoing monitoring;
- Enhancing the monitoring of level 3 assets indicator and focus on the reporting consistency;
- Enhancing the monitoring of (cross-border) reinsurance using an ancillary indicator;
- Refining the monitoring of derivatives and margin calls using an ancillary indicator.

A more detailed description can be found in table 2 below.

Change	Description of change
Removal of the financial guarantees indicator	Remove the financial guarantees indicator from the IIM assessment methodology given that limited exposures to financial guarantees are reported in the IIM data collection. The rationale for the removal of financial guarantees indicator is not only its immateriality over the period 2019-2021 but also its ongoing monitoring of this activity at the sector-wide level. In addition, the IAIS proposed to keep the row 28.1.b “Structured finance” in the IIM data collection and continue in its monitoring for preventive purposes.

	Considering stakeholders' feedback, the IAIS will apply a proportional reweighting of other indicator to smooth the effect of this indicator removal on the overall total score. Moreover, any potential overall score increase will lead to adjustments of the criteria to determine the scope of the annual collective discussions on the outcomes of the GME.
Enhancing the monitoring of level 3 assets indicator	No change to the level 3 assets indicator calculation The indicator however provides limited insight into the composition of level 3 assets, and initial analysis indicates that the measure is not comparable across jurisdictions due to differences in accounting. Given the importance of the indicator and the recent increase in level 3 assets as measured by the indicator, the IAIS will gather some further data points to investigate whether the level 3 assets indicator could be adjusted to better reflect insurers' liquidity risk in a more comparable way across jurisdictions (for example with regards to loans and mortgages). In addition, the IAIS will align reporting of real estate holdings (related either to physical real estates or to holdings of real estate as financial investments).
Enhancing the monitoring of (cross-border) reinsurance	No change to the calculation, where reinsurance is part of two indicators: intra-financial assets and intra-financial liabilities. Reinsurance is a cross-border business at its core. The 2023 IIM data collection aims to provide increased insight into cross-border reinsurance and life (re)insurance related derivatives (eg longevity or mortality swaps) in order to assess potential concentration risk, derivative transactions, cross-regional and cross-border transfers of premiums and technical provisions. Considering the current developments in the (re)insurance sector, especially a transformation of the life section, the IAIS decided to develop a new ancillary indicator for reinsurance in 2023-2025. Different options for the potential ancillary indicator will be considered and tested. The data elements to be collected may still change in the coming years, depending on the quantity and quality of the data received and the analysis carried out, as well as on the development of the ancillary indicator on reinsurance.
Refining the monitoring of derivatives and margin calls	No change is to the derivatives indicator calculation OTC derivatives will be broken down into two categories for monitoring purposes recognising the difference in risk: centrally cleared and not centrally cleared. Although this risk may be mitigated by new margin requirements on derivatives which not are centrally cleared, the extent to which these margin requirements mitigate risk is still uncertain and therefore no amendments will be made to the IIM indicator calculation this stage.

	The risk of margin calls is monitored in the context of the GME liquidity monitoring (eg focus on average and stressed margin calls) including margin calls monitored through the Liquidity Stress Test 2023. A new ancillary indicator for derivatives will be developed in 2023-2025 and will consider various exposure measures (eg potential future exposure, market value and others) in addition to the current gross notional amounts, usage of margin and collateral calls, types of derivative contracts, and their purpose or forms of clearing.
--	--

Table 2. Summary of changes to the IIM assessment methodology for 2023-2025

An overview of the IIM 2023 assessment methodology indicators, denominators and formulas for the can be found in the table 3 below.

Category	Indicator	Denominators	Formulas
Size	1. Total assets	18,027,170	$(9 - 9.3) / (\text{Denominator 1})$
	2. Total revenues	2,517,164	$\text{MAX}(((15 - 15.3) / (\text{Denominator 2})), 0)$
Global activity	3. Revenues outside of home country	901,436	$16 / (\text{Denominator 3})$
	4. Number of countries	1,144	$17 / (\text{Denominator 4})$
Interconnectedness	5. Intra-financial assets	3,861,401	$(20.2 + 21.2 + 22.1 - 22.1.P + 23.2 + 27.1.B + 27.1.C + 39.3.a.1 + 43.A + 40.B.1.a.1) / (\text{Denominator 5})$
	6. Intra-financial liabilities	1,719,091	$(24 - 24.3.b - 24.3.d - 24.4.b - 24.4.d + 24.D.c + 27 + 27.1.A + 39.4.a.1 + 40.B.2.a.1 + 43.B + 12.1.c) / (\text{Denominator 6})$
	7. Derivatives	4,162,248	$(40.A.1.a) / (\text{Denominator 7})$
	8. Derivatives Trading (CDS or similar derivatives instrument protection sold)	52,703	$41.1 / (\text{Denominator 8})$
	9. Minimum guarantees on variable products	A. 1,374,140 B. 5,116,697	$\text{MAX}(((31.1 + 31.2) / (\text{Denominator 10A}) - (40.A.H) / (\text{Denominator 10B})), 0)$
Asset liquidation	10. Short term funding	671,449	$(\{25 + 24.3 + (42.4 - 42.4.d) + (43.4 - 43.4.d) + (40.B.1 - 40.B.1.a + 40.B.2 - 40.B.2.a) * \sqrt{(252 / 10)}\} / (\text{Denominator 11})$
	11. Level 3 assets	541,186	$30.3 / (\text{Denominator 12})$

	12. Liability liquidity	4,838,260	$(100\% * 33.A.1.1 + 50\% * (33.A.1.2 + 33.A.2.1) + 25\% * 33.A.2.2 + 2.5\% * (33.A.1.3 + 33.A.3.1)) / (\text{Denominator } 13)$
Substitut- ability	13. Premiums for specific business lines	A. 5,065	$25\% * (45) / (\text{Denominator } 14A) + 25\% * (4) / (\text{Denominator } 14B) + 25\% * (4) / (\text{Denominator } 14C) + 25\% * (4) / (\text{Denominator } 14D)$
		B. 3,274	
		C. 6,204	
		D. 22,539	

Table 3. Overview of the IIM 2023 assessment methodology indicators, denominators and formulas