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## **Financial Sector Regulation Act, 2017 (Act No.9 of 2017)**

### **Proposed Guidance Notice**

#### **Guidance on liquidity risk management for insurers**

##### ***Objectives of this Guidance Notice***

*A Guidance Notice (GN) is a regulatory instrument to assist insurers in complying with the requirements outlined in the relevant Governance and Operational Standards for Insurers (GOI) and Financial Soundness Standards for Insurers (FSI). Standards enjoy legal standing and are intended to establish minimum requirements with which insurers must comply. GNs, while not having the same legal standing as Standards in terms of enforceability, nonetheless provide clarity on the application of the respective Standards. Insurers are not obliged to adopt or adhere to the proposed application framework offered by the GN and are free to demonstrate that the requirements of the Standards have otherwise been met through the use of alternative application methodologies or frameworks.*

*This GN sets out practices and guidelines aimed at assisting insurers in complying with the requirements of FSI 6 – Liquidity Risk Management, GOI 3 – Risk Management and Internal Controls for Insurers and GOI 3.1 – Own Risk and Solvency Assessment (ORSA) for Insurers, as these standards apply to liquidity risk management for insurers. It aims to illustrate approaches that insurers can consider in treating and managing their liquidity risk. Some elements may not be relevant to all insurers, and others may need to be varied based on an insurer's individual circumstances and characteristics.*

*This GN may reference specific provisions within GOI standards and, as such, must be read in conjunction with the respective standards cited.*

*This GN does not treat cash flows on unit-linked liabilities where the policyholder bears the investment risk as ILR cash flows. Residual liquidity risk on those products remains in scope, consistent with paragraphs 7.4 and 8.3 of FSI 6.*

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## **1. Introduction**

- 1.1 This GN is issued in accordance with the provisions of section 141 of the Financial Sector Regulation Act, 2017 (Act No. 9 of 2017) and should be read in conjunction with Prudential Standard FSI 6 – Liquidity Risk Management, GOI 3 – Risk Management and Internal Controls for Insurers and GOI 3.1 – Own Risk and Solvency Assessment (ORSA) for Insurers.
- 1.2 The purpose of this GN is to provide guidelines to all insurers licensed under the Insurance Act, 2017 other than microinsurers, Lloyd's and branches of foreign reinsurers, on the application of Prudential Standards such as Financial Soundness Standards and Governance and Operational Standards (GOIs) relating to liquidity risk management.
- 1.3 This GN does not provide exhaustive guidance on liquidity risk management. It is therefore incumbent on insurers to understand the liquidity risk (that is, market-liquidity risk and funding-liquidity risk) they face and apply the guidance in proportion to their nature, scale, complexity and risk profile to ensure compliance with the Insurance Act, 2017 (Act No. 18 of 2017) and the standards issued under it.

## **2. Background**

- 2.1 Insurers have traditionally relied on premiums, investment income, and other sources of funding and liquidity. Nevertheless, they must maintain adequate liquidity to fulfil both expected and unexpected payment obligations and funding needs. Effective liquidity risk management is therefore essential to the insurer's operation, the protection of policyholders and overall financial stability.
- 2.2 Experience has shown that even solvent insurers can experience material financial distress, including failure, if funding and liquidity are not managed prudently. While most insurers' liabilities are long-term or based on contingent events, certain activities can result in significant and unanticipated demands for funding and liquidity. Insurers with insufficient liquidity may therefore be forced to take remedial actions that could amplify or accelerate systemic stress in the financial system during stressful periods.
- 2.3 Liquidity risk refers to the possibility that an insurer, despite being solvent, may not be able to meet its financial obligations as they become due or may only do so at significant unexpected costs. Liquidity is fundamentally different from solvency in that while both are essential to an insurer in remaining a going concern, liquidity has a "real-time" dimension that solvency may not have.
- 2.4 Insufficient liquidity can cause failure for insurers that are otherwise solvent. Accordingly, a capital management framework alone may be inadequate to address liquidity risk. Liquidity risk is not mitigated by holding capital; it is mitigated through investing in liquid and marketable assets and establishing contingent funding sources.
- 2.5 Insurers generally manage liquidity risk in two portfolios: the shareholder and policyholder portfolios.

- 2.6 The policyholder portfolio is described as follows:
- 2.6.1 The liquidity risk is passed on to the policyholders, in that the value of the payments of policyholder liabilities is linked to the realised value of the underlying assets. No investment-performance liquidity risk is retained; residual liquidity risk remains with the insurer.
  - 2.6.2 Residual liquidity risk that is not passed on to policyholders is borne by shareholders. For example, liquidity risk may arise where the realisable value of the underlying assets is lower than the adjusted benefit payment because prescribed regulatory limits or policy wording restrict the extent to which benefits may be adjusted. Liquidity risk may also arise where assets backing guaranteed product liabilities, including shareholder risk products, are not sufficiently liquid to meet obligations as they fall due.
- 2.7 Liquidity risk in the shareholder portfolio arises from risks assumed by the shareholders in all shareholder-backed activities.
- 2.8 Integrated liquidity risk management involves consideration of liquidity risk within the broader risk management framework of the insurer, including its interactions with asset-liability management, investment decisions, capital management, business planning and stress testing. It provides a holistic view of the insurer's liquidity risk profile, including how other material risks may affect liquidity, and supports sound decision-making across the business.

### **3. Governance and risk management**

- 3.1 Paragraph 4 of Prudential Standard FSI 6 – Liquidity Risk Management sets out the requirements for an insurer's liquidity risk governance and management framework.
- 3.2 Senior management is responsible for implementing the insurer's risk appetite in line with its strategic objectives and should ensure that such risk appetite is integrated into the day-to-day activities of the insurer.
- 3.3 Reports on liquidity risk should be periodically provided to the insurer's board, its sub-committees, and other relevant personnel. Reports to the insurer's board and its sub-committees may be less detailed and less frequent than reports to senior management responsible for managing liquidity risk.
- 3.4 When developing a liquidity risk appetite framework, the insurer should determine the duration, types and severity of liquidity stresses it intends to withstand. In doing so, it could consider defining the following:
  - 3.4.1 Time horizons over which the identified risks are expected to materialise. Multiple tenors should be considered;
  - 3.4.2 Types and values of assets that the insurer includes in its high-quality liquid assets (HQLA) portfolio; and
  - 3.4.3 The minimum level of the HQLA portfolio that the insurer intends to hold relative to stressed liquidity requirements in the time horizon considered in the different scenarios.

- 3.5 The insurer is encouraged to conduct regular reviews of its limits and make adjustments as necessary. These reviews should take place at least annually and when there are material changes in conditions or in the insurer's risk tolerance.

#### **4. Risk appetite and risk limits**

- 4.1 A clearly defined liquidity risk appetite is a key component of effective liquidity risk management. A liquidity risk appetite statement typically describes the duration and type of stress that the insurer intends to withstand. It may include both quantitative measures, such as excess liquidity or insurance liquidity ratios, and qualitative objectives. To be effective, the statement is generally expressed in a manner that can be readily understood and applied throughout the organisation.
- 4.2 Several techniques can be used to measure liquidity risk. Paragraph 10.3.3 of Prudential Standard FSI 6 requires the ORSA to describe the systems and metrics used to measure and monitor that risk. In this context, "systems" means the processes, tools, data and reporting arrangements through which liquidity risk is measured and monitored. It is not limited to information-technology platforms. "Metrics" means the quantitative measures produced by those arrangements, such as the insurance liquidity ratio, stressed net cash-flow positions by maturity bucket, the size and composition of the HQLA portfolio, and internal liquidity limits. The systems and metrics may range from basic calculations to advanced modelling, in line with the nature, scale and complexity of the insurer's activities.
- 4.3 The implementation of the insurer's liquidity risk appetite may involve the establishment of limits that reflect the nature, scale and complexity of the insurer's activities. Areas for which limits may be set include:
- 4.3.1 non-insurance liabilities that mature or are redeemable within various time horizons;
  - 4.3.2 off-balance-sheet or other exposures that could create liquidity needs during periods of market stress;
  - 4.3.3 concentrations in liquid assets and funding sources by currency, single counterparty or group of related counterparties, counterparty type, instrument type, and instrument seniority;
  - 4.3.4 liquidity risk arising from insurance liabilities;
  - 4.3.5 maturity gaps; and
  - 4.3.6 the value or proportion of encumbered assets.
- 4.4 These limits should be documented in the insurer's ORSA under paragraph 10.3 of Prudential Standard FSI 6. Paragraph 10.3 does not require a separate liquidity risk management report. It requires specified liquidity content in the ORSA. Paragraph 10.3.1 requires a statement of the insurer's liquidity risk appetite and risk limits. Paragraph 10.3.2 requires an overview of the current funding and liquidity position against that appetite and those limits. The ORSA should therefore set out the limits and explain how they interact with the stated risk appetite and with the current liquidity position.
- 4.5 Effective liquidity risk management is supported where liquidity risk is considered alongside investment risks in business decisions such as purchases, sales and asset allocation. The insurer's stated liquidity risk appetite may also inform product design, particularly where products include features such as large policy limits, guaranteed rates, surrender periods and benefits that could influence the insurer's liquidity profile.

## **5. Identification of material liquidity risk drivers**

- 5.1 Paragraph 5 of Prudential Standard FSI 6 – Liquidity Risk Management sets out the requirements for the identification and understanding of liquidity risk drivers.
- 5.2 Liquidity risk drivers are specific to an insurer's business and should be identified relative to each insurer's business structure and classes of business.
- 5.3 Some activities may increase the insurer's exposure to liquidity risk, where such activities may generate liquidity and funding needs, potentially leading to its failure or generating systemic risk<sup>1</sup> under certain circumstances.  
These include, but are not limited to:
  - 5.3.1 Derivatives: Some derivatives contracts require collateral or a margin to be posted for mark-to-market movements in the value of the contract. These derivatives, used to hedge market risk arising from investments and liabilities, introduce potential liquidity risk on the insurer's balance sheet. A significant macroeconomic shock could trigger calls for additional margins or collateral, resulting in a liquidity risk event;
  - 5.3.2 Securities lending transactions: If funds received are reinvested in illiquid assets, sudden recalls of these funds could force the insurer to sell assets. In a stressed market, these sales could impact the insurer's creditworthiness, trigger more collateral demands and lead to a price spiral as the lender is compelled to sell more assets to meet these collateral obligations; and
  - 5.3.3 Liquid liabilities backed by illiquid assets: Some products offered by insurers contain provisions whereby a policyholder can withdraw cash from the policy with little notice or penalty. Where insurers do not adequately match such liabilities with sufficient liquid assets, this may lead to a liquidity shortage in certain circumstances and ultimately trigger fire sales<sup>2</sup>.
- 5.4 The following liquidity risk drivers may be relevant when assessing and designing the liquidity stresses:
  - 5.4.1 Exposure to insurable events: Relevant considerations may include the nature, frequency, and severity of exposures to insurable events, including catastrophic events, pandemics or material legal decisions that may occur within a short time horizon. Dependence on reinsurance and the possibility that a material portion of reinsurance recoverables may be temporarily uncollectible or not funded on a timely basis, even if ultimately collectible, may also affect liquidity under stress conditions. Where the insurer holds collateral for reinsurance, the value and liquidity of the collateral may be relevant considerations under a stress event;
  - 5.4.2 Policyholder behaviour: This may include assessing possible withdrawals from different product types; some product features may create an immediate liquidity need, such as guarantees, surrender penalties, maturity dates, interest rate

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<sup>1</sup> Systemic risk, as defined by the Bank for International Settlements (BIS), International Monetary Fund, and Financial Stability Board, refers to a risk of disruption to financial services that is caused by an impairment of all or parts of the financial system and has the potential to have serious negative consequences for the real economy (BIS, 2009).

<sup>2</sup>Fire sale generally refers to a forced sale where a large volume of securities is sold in a short time at dislocated prices.

sensitivity, product purpose, borrowing costs for policy loans and customer type. When determining potential stresses, relevant assessments may include a potential reduction in regular premium receipts, non-renewals of contracts, and declines in new business and their impact on cash flows;

- 5.4.3 Reputation: The insurer's reputation or the policyholder's confidence in its financial position may trigger increased policy lapses or withdrawals. The impact of such events on the insurer's liquidity position may be relevant in the assessment;
- 5.4.4 Contingent or off-balance sheet exposures: relevant considerations may include derivative cash flows and collateral requirements arising from deteriorating market conditions. These include cash requirements from additional costs to rebalance the portfolios;
- 5.4.5 Reinsurance and other off-balance-sheet commitments: Relevant considerations may include collateral needs arising from reinsurance arrangements and any other potential material liquidity needs arising from off-balance sheet commitments, contracts, and facilities;
- 5.4.6 Impact of credit rating deterioration: may include all types of outflows and collateral requirements resulting from credit downgrades of varying magnitude as well as the types, quantity and timing of potential collateral and margin requirements. The analysis may cover retail and institutional policyholders as well as capital markets and reinsurance counterparties;
- 5.4.7 Ability to transfer liquidity across entities, jurisdictions and portfolios: For insurers that form part of a group, the transferability of excess liquidity within the group may be affected by legal, regulatory and operational constraints. These constraints may limit the transfer of liquidity and unencumbered assets between entities, business lines, and countries during both business-as-usual and stressed conditions. A prudent assumption is that, under stress, some or all intragroup liquidity may become non-transferrable. The extent to which liquidity can realistically be transferred may therefore be a relevant consideration when assessing liquidity stresses;
- 5.4.8 Legally or operationally ring-fenced assets: legally or operationally ring-fenced assets may affect an insurer's liquidity position under stressed conditions. Such assets may include legally insulated unit-linked assets, closed blocks<sup>3</sup>, with-profit funds, or annuity product lines. The fungibility of liquidity across ring-fenced funds may be limited. The extent to which assets within these arrangements may affect the insurer's balance sheet and liquidity risk profile through guarantees, hedging programmes or other regulatory requirements to replace or maintain assets, may therefore be a relevant consideration;
- 5.4.9 Foreign exchange convertibility and access to foreign exchange markets: Liquidity needs may differ by currency. Impaired access to foreign exchange markets and loss of convertibility under stressed conditions may affect the ability to fund liquidity shortfalls in particular currencies;

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<sup>3</sup> Closed blocks refer to discrete pools of assets that are set aside to support the dividend expectations of participating policyholders from the periods before demutualisation, as well as anticipated policy benefits. Typically, changes in their values are primarily offset by future changes in the dividend rates on these participating policies.

- 5.4.10 The reduction in secured and unsecured wholesale funding: Wholesale funding<sup>4</sup> may behave differently under stressed conditions. Relevant considerations may include the shortening of funding tenors where funding providers have call options or elect not to roll over or extend the funding maturity. Under stressed conditions, funding providers may be unable or unwilling to provide new unsecured borrowings or roll over or extend the maturity of existing funding for the duration of the stress horizon. Wholesale funding<sup>5</sup> that gives the counterparty the option to accelerate may be particularly relevant when assessing liquidity stresses; and
- 5.4.11 Correlation and concentration of funding sources: Relevant considerations may include the instrument type, market, currency and counterparty, including groups of related counterparties. The effectiveness of diversification across the insurer's funding sources may influence the resilience of funding arrangements under stressed conditions.

## **6. Stress testing**

- 6.1 Paragraph 6 of Prudential Standard FSI 6 – Liquidity Risk Management sets out the requirements for stress testing as a key component of liquidity risk management.
- 6.2 Through stress testing, an insurer can develop a sound understanding of how its activities affect its liquidity risk profile under stressed conditions. Robust stress testing is an important component of effective liquidity risk management. Refer to Annexure 1 for further guidance on the types of stresses insurers may consider.
- 6.3 Depending on its business model, an insurer may face different liquidity stresses compared to other insurers. Certain activities may give rise to larger or less predictable liquidity needs. Stress scenarios should be designed to reveal vulnerabilities in the insurer's liquidity profile, as required by paragraph 6.2 of FSI 6, and are subject to board review and approval under paragraph 4.3.5. These scenarios can assist management to identify the insurer's material risks. Scenarios and model parameters must be forward-looking and extend beyond historical events, distributions and correlations, as required by paragraph 6.7 of FSI 6.
- 6.4 Assessing the impact of its chosen scenarios on cash flows and available liquidity resources at each time horizon specified in the Liquidity Return may assist insurers in understanding how liquidity pressures develop over time, including within a horizon and not only at the end of that horizon.
- 6.5 Development of stress scenarios may be supported by conservative qualitative and quantitative assumptions. Prudence may include avoiding any assumption that uncommitted off-balance-sheet funding lines will remain available during stressed conditions as funding providers may face similar pressures at the same time.
- 6.6 Other potential cash inflows, such as future premiums, may remain available under certain stressed conditions. The extent to which those inflows remain available may depend on the nature of the stress scenarios. When forecasting cash flows, assumptions regarding the stability of the insurer's book of policies may be appropriate where consistent with the stress scenarios. Planned management actions during stressed conditions may also take into account the potential impact on the insurer's reputation.

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<sup>4</sup> Wholesale funding generally refers to any financing from institutions.

- 6.7 Liquidity stress testing and capital stress testing may produce different outcomes. Scenarios developed for capital purposes may not adequately capture liquidity risks. Where appropriate, separate liquidity stress scenarios may therefore provide additional insights.
- 7. Composition and maintenance of high-quality liquid assets in the HQLA portfolio**
- 7.1 Paragraph 8 of Prudential Standard FSI 6 – Liquidity Risk Management sets out the requirements for the HQLA.
- 7.2 Assets included in the HQLA portfolio are generally documented at the appropriate level of granularity. Cash flow estimates from the business-as-usual projections and stress testing results may assist insurers in determining the appropriate asset level to address potential liquidity gaps in a manner consistent with the approved liquidity risk appetite.
- 7.3 The HQLA portfolio should be low risk<sup>5</sup>, easily and reliably valued, and not closely correlated with risky assets. Typically, these assets have a consistently active outright sale or repo market with a broad and diverse pool of active buyers and sellers, meaning they are ‘readily marketable’. Such assets generally have a proven record of providing reliable liquidity during stressed market conditions.
- 7.4 There are inherent differences in the liquidity of these assets, which may affect the insurer's ability to monetise them during stressed situations. Grouping assets according to their usability under stress conditions may assist insurers in managing liquidity risks more effectively. To ensure their realisability in stress and to minimise financial stability impacts from the monetisation of financial assets, insurers generally should not rely on assets with lower liquidity characteristics for short-term stress tests as they may be unable to monetise these assets quickly enough to meet liquidity needs. Moreover, large sales of assets with lower liquidity characteristics in a short time, particularly in stressed conditions, could impact market prices, thereby affecting similar assets held by other institutions.
- 7.5 For short-term stress scenarios (one month or less), HQLA portfolios would typically consist primarily of Level 1 assets, although limited quantities of Level 2a and, where appropriate, Level 2b assets may also be held. For medium-term stresses (between one and three months), both Level 1 and 2a assets play a more prominent role, with limited quantities of Level 2b assets potentially being appropriate depending on the circumstances. For longer-term stress periods (longer than three months), assets may generally be realised in a more strategic manner to minimise losses. In these circumstances, Level 1, 2a, and 2b assets may be allocated to the HQLA portfolio in appropriate quantities.
- 7.6 Excessive concentration of assets within a single asset class or in assets that are closely correlated may reduce the effectiveness of the HQLA portfolio during periods of stress. Concentration of assets by counterparty (including group-related entities)

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<sup>5</sup> Low risk, in this context, means assets that tend to have higher liquidity. Such assets are typically characterised by a high credit standing of the issuer, a low degree of subordination, low duration, low legal risk, low inflation risk, and denomination in a convertible currency with low foreign-exchange risk. Duration is a measure of the price sensitivity of a fixed-income security to changes in interest rates.

and by instrument type may therefore be relevant considerations when assessing the composition of the HQLA portfolio.

- 7.7 The transferability of the assets within the HQLA portfolio may be affected where assets are located in jurisdictions that impose legal or regulatory restrictions. Under stressed conditions, assets held by underwriting entities may not be readily transferable elsewhere within the group because of policyholder protection considerations.
- 7.8 Haircuts applicable to HQLA, including any additional haircut for foreign-currency assets, are determined by the Authority in the notice published under paragraphs 8.3 and 8.12 of Prudential Standard FSI 6. Insurers should apply the haircuts specified in that notice and should not apply a different stacking rule unless the notice provides for it.
- 7.9 Further considerations may be relevant when deciding whether an asset should be included in the HQLA portfolio. An asset should not be counted twice. If the insurer has already recognised the asset's expected cash flows, such as coupons, interest or maturities, as inflows in its liquidity stress-test projections, that asset should not also be included in the HQLA portfolio. If the asset were sold, those cash flows would no longer be received. The insurer may also be unwilling or unable to sell the asset without disrupting its existing business or risk-management strategy. This does not prevent the insurer from including in the HQLA portfolio assets that are intended to meet cash-flow needs beyond the relevant stress horizon. In that case the insurer would generally have time to rebalance the portfolio.
- 7.10 Periodic assessment of the insurer's ability to convert the HQLA portfolio into cash in a short time frame may provide useful information regarding its liquidity position. This may involve monetising a representative portion of the HQLA portfolio, either through repo or outright sale in the normal course of business. This may help the insurer test its market access, the effectiveness of its monetisation processes, and asset availability, while minimising the risk of negative signals during a period of actual stress.
- 7.11 Even where policyholders fully bear the investment performance risk on assets backing their policies, large-scale sales or purchases for these policies may still present operational challenges. As such, the ability to monetise assets without compromising on either speed of disposal or price may be an important consideration. As part of this assessment, relevant assumptions may include the time required to dispose of significant blocks or the availability of willing counterparties for repo transactions. The potential impact of significant asset sales on the broader market and financial stability may also be relevant.

Fundi Tshazibana  
**Chief Executive Officer**

Date:

## Annexure 1 Guidance on stress scenarios

Illustrative approach to liquidity stress testing.

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### 1. Overview of Stress Testing Framework

This Annexure illustrates one possible approach to structuring liquidity stress testing consistent with paragraph 6 of FSI 6. It is illustrative only; insurers may adopt any approach that meets the requirements of the Standard.

- **Objective:** Assess the insurer's liquidity resilience under severe yet plausible scenarios, modelling liquidity risk as a consequential outcome of primary events.
  - **Scope:** Covers illustrative scenarios and tailored scenarios, with impacts assessed across the maturity ladder as outlined in the liquidity risk return.
  - **Methodology:** Scenarios and assumptions are forward-looking, consistent with paragraph 6.7 of FSI 6, and are informed by credible data sources as contemplated by paragraph 6.10. Results are accompanied by the uncertainty quantification required under paragraph 6.9, illustrated here as a 95% confidence interval or a sensitivity range.
  - **Linkages:** Results inform the ILR (Paragraph 7), contingency funding plan (Paragraph 9), and ORSA liquidity content required by paragraph 10.3.
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### 2. Stress Test Scenarios

**Instructions:** The tables below illustrate how an insurer might document tailored scenarios relevant to its business model, as contemplated by paragraphs 6.5.3 and 7.3. For each scenario, describe the primary event, consequential liquidity impacts, and key assumptions.

#### Scenario 1: Illustrative Scenario – Market Crash

- **Primary event:** A 20% decline in financial markets over 30 days, reducing HQLA marketability.
- **Consequential liquidity impacts:**
  - 15% loss of value on Levels 2a and 2b HQLA due to market stress.
  - 10% increase in policyholder surrenders for life insurers or early terminations for non-life insurers.
  - Reinsurance recoveries delayed by 15 days.
- **Key Assumptions:**
  - HQLA portfolio: 60% Level 1, 30% Level 2a, 10% Level 2b.
  - Surrender rates: Base rate  $\pm 10\%$  variability.
  - Market haircut variability:  $\pm 5\%$ .
- **Data Sources:** [e.g., Bloomberg market data, historical volatility, insurer's claims history]

#### Scenario 2: Illustrative scenario – cyber attack

- **Primary event:** A cyberattack halts policy administration systems for 20 days.
- **Consequential Liquidity Impacts:**
  - 100% delay in premium inflows for 7 days.
  - 20% increase in operational costs for recovery efforts.
  - 15% increase in policyholder surrenders due to reputational damage.
- **Key Assumptions:**
  - Premium inflows: Base rate  $\pm 10\%$  variability.
  - Surrender rates: Base rate  $\pm 5\%$  variability.
  - Operational cost increase:  $\pm 5\%$  variability.
- **Data Sources:** [e.g. Industry cyber incident reports, insurer's IT recovery plans]

### Scenario 3: Tailored Scenario – Catastrophic Flood (Non-Life Insurer Example)

- **Primary Event:** A major flood triggers claims equal to 50% of annual premiums.
- **Consequential Liquidity Impacts:**
  - R 500 million in claims payouts over 30 days.
  - 10% loss of value on HQLA due to market stress.
  - Reinsurance recoveries delayed by 30 days.
- **Key Assumptions:**
  - Claims volume: Base estimate  $\pm 15\%$  variability.
  - HQLA haircut:  $\pm 5\%$  variability.
  - Reinsurance recovery delay: 15–45 days.
- **Data Sources:** [e.g., Historical flood claims data, reinsurer contracts, regional weather forecasts]

### Scenario 4: Reverse Stress Test – HQLA Depletion

- **Outcome:** Complete depletion of HQLA by day 8 in this illustration.
  - **Primary Event:** A combination of a major earthquake and market crash.
  - **Consequential Liquidity Impacts:**
    - R1 billion in claims payouts.
    - 25% increase in policyholder surrenders.
    - 20% loss of value on all HQLA due to market illiquidity.
  - **Key Assumptions:**
    - Claims volume: Base estimate  $\pm 20\%$  variability.
    - Surrender rates: Base rate  $\pm 10\%$  variability.
    - HQLA haircut:  $\pm 10\%$  variability.
  - **Data Sources:** [e.g., Seismic risk models, historical surrender data, market stress scenarios]
-

### 3. Stress Test Results

**Table 1: Illustrative stress-test results**

*Illustrative only. The figures are dummy and are not Prudential Authority benchmarks.*

Liquidity coverage in this table is HQLA remaining after cumulative net cash outflows, expressed as a percentage of opening HQLA. It is not the insurance liquidity ratio. The ILR is shown only on the 8–30 day row, which is the 30-calendar-day horizon in paragraph 7.1.

The rows are cumulative buckets of one ladder, as required by paragraph 6.4.

| Scenario            | Time horizon | Cumulative net cash outflows (% of opening HQLA) | HQLA remaining (%) | Paragraph 6.9 range on HQLA remaining | ILR (30-day horizon only) | Days to HQLA exhaustion from day 0 |
|---------------------|--------------|--------------------------------------------------|--------------------|---------------------------------------|---------------------------|------------------------------------|
| Market crash        | 0–1 day      | 5                                                | 95                 | 93–97                                 | —                         | 33                                 |
|                     | 2–7 days     | 18                                               | 82                 | 78–86                                 | —                         | 33                                 |
|                     | 8–30 days    | 91                                               | 9                  | 5–13                                  | 110                       | 33                                 |
|                     | 1–3 months   | 120                                              | 0                  | 0–4                                   | —                         | 33                                 |
|                     | 3–12 months  | 150                                              | 0                  | 0–4                                   | —                         | 33                                 |
| Cyberattack         | 0–1 day      | 3                                                | 97                 | 95–99                                 | —                         | 20                                 |
|                     | 2–7 days     | 22                                               | 78                 | 74–82                                 | —                         | 20                                 |
|                     | 8–30 days    | 125                                              | 0                  | 0–5                                   | 80                        | 20                                 |
|                     | 1–3 months   | 140                                              | 0                  | 0–4                                   | —                         | 20                                 |
|                     | 3–12 months  | 160                                              | 0                  | 0–4                                   | —                         | 20                                 |
| Catastrophic flood  | 0–1 day      | 10                                               | 90                 | 86–94                                 | —                         | 15                                 |
|                     | 2–7 days     | 28                                               | 72                 | 67–77                                 | —                         | 15                                 |
|                     | 8–30 days    | 133                                              | 0                  | 0–5                                   | 75                        | 15                                 |
|                     | 1–3 months   | 150                                              | 0                  | 0–4                                   | —                         | 15                                 |
|                     | 3–12 months  | 170                                              | 0                  | 0–4                                   | —                         | 15                                 |
| Reverse stress test | 0–1 day      | 15                                               | 85                 | 80–90                                 | —                         | 8                                  |
|                     | 2–7 days     | 45                                               | 55                 | 48–62                                 | —                         | 8                                  |
|                     | 8–30 days    | 250                                              | 0                  | 0–5                                   | 40                        | 8                                  |

| Scenario | Time horizon | Cumulative net cash outflows (% of opening HQLA) | HQLA remaining (%) | Paragraph 6.9 range on HQLA remaining | ILR (30-day horizon only) | Days to HQLA exhaustion from day 0 |
|----------|--------------|--------------------------------------------------|--------------------|---------------------------------------|---------------------------|------------------------------------|
|          | 1–3 months   | 300                                              | 0                  | 0–4                                   | —                         | 8                                  |
|          | 3–12 months  | 350                                              | 0                  | 0–4                                   | —                         | 8                                  |

## Notes

- Opening HQLA is indexed to 100. HQLA remaining (%) = 100 minus cumulative net cash outflows, floored at zero. Cumulative net cash outflows are not floored. They are the demand on liquidity and may exceed 100 after the stock is exhausted.
- ILR = opening adjusted HQLA / 30-day net cash outflows under stress. The denominator is the paragraph 7.4 quantity: net cash flows under stress for the subsequent 30 calendar days, with inflows capped at 75% of outflows. ILR is not calculated at other tenors.
- Days to exhaustion is a single outcome for the scenario. It is not reset at each row. Once HQLA remaining is zero, later rows stay at zero.
- The 8–30 day row is the 30-calendar-day point that feeds the ILR. The 1–3 month and 3–12 month rows are the acute three-month and protracted twelve-month horizons in paragraph 6.3.
- The paragraph 6.9 range is a 95% confidence interval or a sensitivity range. Smaller insurers may use high, medium and low assumptions instead of simulation.
- A 30-day ILR below 100% is a breach of the minimum in paragraphs 7.1 and 7.2 of FSI 6 and requires the insurer to restore the ILR; the cyberattack and flood results illustrate an insurer in that position. HQLA remaining of zero before the end of a horizon is a shortfall that must inform the contingency funding plan under paragraph 9, and the CFP must be tested to confirm it can maintain the ILR at or above 100% (paragraph 9.2.7).

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## 4. Methodology and Assumptions

- **Data sources:** [e.g., Bloomberg for market data, reinsurer contracts for recovery timelines, and historical claims for the assigned scenario].
- **Statistical methods:**
  - **Monte Carlo simulations:** Used for confidence intervals, varying assumptions (e.g., claims  $\pm 15\%$ , haircuts  $\pm 5\%$ ) over 1,000 runs.
  - **Sensitivity analysis:** For smaller insurers, tested high, medium or low assumptions (e.g., claims at 40%, 50%, or 60% of premiums).
- **Key assumptions:**
  - HQLA portfolio: 60% Level 1, 30% Level 2a, 10% Level 2b.
  - Inflow cap: 75% of outflows, per ILR methodology.
  - Policyholder behaviour: Surrender rates increase 10–25% under stress.
- **Limitations:** [e.g. Limited data on cyberattack recovery costs; relied on industry estimates].

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## 5. Linkages to Contingency Funding Plan

**Instructions:** The examples below illustrate how stress test results might inform the CFP required under paragraph 9 of FSI 6, including illustrative triggers and actions.

- **Market Crash:**
  - **Shortfall:** 30-day ILR remains 110, but HQLA remaining is 9% at day 30 and the stock is exhausted at day 33.
  - **Action:** Access a pre-arranged credit line within 3 days; monetise Level 2a assets subject to the haircuts in the notice under paragraphs 8.11 and 8.14.
  - **Trigger:** HQLA remaining below 15%, or projected exhaustion inside 40 days.
- **Cyberattack:**
  - **Shortfall:** 30-day ILR of 80%; HQLA exhausted at day 20.
  - **Action:** Activate emergency liquidity fund (R50 million) within 5 days; negotiate with reinsurers for expedited recoveries.
  - **Trigger:** System downtime exceeds 3 days.
- **Catastrophic flood:**
  - **Shortfall:** 30-day ILR of 75%; HQLA exhausted at day 15.
  - **Action:** Issue R300 million in short-term bonds within 7 days; liquidate 20% of Level 2b assets.
  - **Trigger:** Claims exceed 30% of annual premiums.
- **Reverse Stress Test:**
  - **Shortfall:** HQLA exhausted at day 8; 30-day ILR of 40%.
  - **Action:** Suspend non-critical outflows (e.g., dividends); seek regulatory approval for capital injection.
  - **Trigger:** HQLA < 10% of required level.

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## 6. Board review and approval

- **Review date:** [e.g., date]
- **Review process:** The board/subcommittee assessed:
  - Scenario severity and plausibility (e.g., 20% market crash aligned with historical crises).
  - Relevance to risk appetite (e.g. 30-day ILR of at least 120% under the standardised scenario).
  - Consequential risk pathways (e.g., cyberattack → surrender surge → liquidity shortfall).
- **Approval:** [e.g. Approved by the board (or by a board committee under delegated authority) on date]
- **Ad-Hoc Reviews:** [e.g. Planned for date due to new product launch]

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## 7. Recommendations and next steps

- **Mitigation actions:** [e.g. Increase Level 1 HQLA to 65% to improve ILR under stress; enhance cyber resilience to reduce downtime].

- **Data improvements:** [e.g. Source additional cyber incident data; refine flood claims models].
- **Contingency plan updates:** [e.g. Add trigger for bond issuance when the 30-day ILR falls below 115%].

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## Guidance for Use

### For all insurers

An insurer adopting an approach along these lines would typically select scenarios spanning market-wide and idiosyncratic events, present results across the maturity ladder contemplated by paragraph 6.4, with the uncertainty quantification required by paragraph 6.9, and reflect the outcomes in its ORSA as contemplated by paragraph 10.3 of FSI 6. The form, manner and period of any reporting to the Authority are as determined under paragraph 11 of FSI 6.

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**Illustrative calculation: uncertainty quantification Scenario:** Cyberattack (20-day system halt).

**Metric:** 30-day ILR.

**Base estimate:** ILR = 80%.

**Assumptions:**

- Surrender rates: 15%  $\pm$  5%.
  - HQLA haircuts: 10%  $\pm$  5%.
- Method:** Monte Carlo simulation (1,000 runs) varying assumptions.  
**Result:** ILR = 80%, with 95% of modelled outcomes falling between 75% and 85% (Monte Carlo, 1,000 runs).  
**For smaller insurers:** Sensitivity range (low: ILR = 75% with high surrenders/haircuts; high: ILR = 85% with low surrenders/haircuts).

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## Customisation notes

- **Insurer-specific adjustments:** Tailor Scenario and assumptions to your business (e.g., pandemic for health insurers, surrender surge for life insurers).
- **Data availability:** If data is limited, use qualitative assumptions or industry benchmarks, noting limitations.
- **Reverse stress test:** Adjust the depletion scenario to reflect your worst-case risk (e.g., a product-specific crisis).