

Good practices on liquidity risk management

In the past two years, AIs have strengthened their liquidity risk management in response to the lessons drawn from the 2023 Banking Turmoil in the US and Europe, following the relevant HKMA guidance. This annex summarises good practices that the HKMA observed from recent supervisory reviews in respect of liquidity stress-testing, contingency planning as well as the use of monitoring tools. AIs should make reference to these good industry practices, and take steps to enhance risk management systems and controls as appropriate.

I. Liquidity stress-testing

1. *Deposit outflows* – Many AIs have revisited their stress-testing programmes and assumptions in the light of the experience observed during the 2023 Banking Turmoil. Making reference to the information shared by the relevant authorities¹, the AIs concerned have substantially increased the severity of deposit outflow assumptions, particularly during the initial stage (e.g. first 7 days) of liquidity shocks, to capture the potential impact of banking service digitalisation and social media on depositor behaviours. Some AIs have also developed new stress scenarios to assess their liquidity resilience to large-scale deposit outflows over a short horizon (e.g. one week).
2. *Digital add-on* – To better reflect the potential increase in deposit outflows via digital channels in times of stress, some AIs have applied a “digital add-on” to their stress test assumptions. In general, these AIs have calibrated the add-on based on in-depth analyses of customers’ habits of using the digital channels and reliance thereon, and added a prudent buffer leveraging their expert judgement to account for the uncertainties when liquidity stress materialises. Some of these AIs have also factored in fund transfer limits when determining the digital add-on.
3. *Deposit concentration* – Many AIs noted that depositors with similar characteristics tend to behave analogously especially under stressed scenarios. Through granular analyses of their depositors, some AIs have attempted to identify concentrated exposures in various dimensions, such as individual names, geographical locations and economic sectors. In cases where relatively high reliance on a particular type of depositors was detected, the AIs concerned have simulated stress scenarios to gauge their resilience against heightened outflows from such depositors.

¹ For instance, *Financial Stability Report 2024* issued by the Swiss National Bank in June 2024 and the report on *Depositor Behaviour and Interest Rate and Liquidity Risks in the Financial System: Lessons from the March 2023 banking turmoil* issued by the Financial Stability Board in October 2024.

4. *Deposit protection* – Recognising that deposit protection schemes might have a material impact on depositor behaviours during stressed periods, some AIs have performed detailed analyses of their deposit bases and considered this factor in their liquidity stress tests by adopting more granular assumptions for deposit drains (e.g. a higher outflow rate for the uninsured portion of deposits).
5. *Reverse stress tests (RSTs)* – Some AIs have made good use of RSTs to understand their vulnerabilities which might potentially threaten their resilience. These AIs have identified not only the levels of liquidity stress that might cause their statutory liquidity ratios to breach internal limits and minimum requirements, but also the more extreme scenarios with possible difficulties in coping with fund outflows.

Some AIs have further developed a suite of RSTs over different settings having regard to their liquidity risk profile, such as over a range of stressed horizons (e.g. one week, two weeks and one month), severe withdrawals by customers with long and stable relationships, and more acute outflows from corporate customers than those from retail customers and vice versa. Leveraging the RST results, these AIs have implemented measures to enhance their liquidity resilience and devised action plans for coping with such scenarios.

II. Contingency planning

6. *Liquidity management outside business hours* – Digitalisation of banking services has enabled fund flows around the clock, thereby affecting AIs' liquidity positions 24/7. To assess the liquidity buffers needed for handling these fund flows, some AIs have scrutinised historical payment patterns and trends, and set aside a sufficient cushion for dealing with liquidity stress that may emerge outside business hours. To this end, AIs are expected to make effective use of the Faster Payment System Discount Window for maintaining adequate liquidity buffers to address potential funding needs.
7. *Funding arrangements with Head Offices or parent banks* – In situations of heightened stress, AIs may need to seek funding support from their Head Offices or parent banks to deal with liquidity outflows, especially when the AIs encounter difficulties in obtaining funding from unrelated counterparties in the market. Some AIs which have included such support in their contingency funding plans (CFPs) have formalised the relevant arrangements with their Head Offices or parent banks, through specifying the minimum amount of funds, currencies, transfer channels and time etc. Having formal arrangements which can be deployed with certainty in stressed situations would help ensure operational feasibility.
8. *Drills on CFPs* – While AIs are required to regularly test their CFPs to ascertain operational feasibility, some AIs have performed drills at a very detailed level to

mock up stress scenarios. These AIs have involved external counterparties, their Head Offices or parent banks for funding support as well as central banks to test their funding capacity and operational preparedness. These AIs have also required multiple staff members having the same role to take part in the drills so that there would be sufficient backup familiar with the processes and procedures for handling contingencies, and that the planned arrangements could be executed at very short notice. These AIs have evaluated and reported the drill results to their senior management, and made recommendations for further enhancements as appropriate.

9. *Potential collateral for contingency funding* – AIs are required to establish systems to identify assets which can be used as collateral for securing funding from the market or central banks during both normal and stressed situations, calculate the relevant positions and track the physical locations of the assets. Some AIs have regularly assessed the market depth, mobility and transferability of such assets through real transactions, and performed ad hoc assessments when market volatility was heightened. A number of AIs have taken further steps by incorporating the assessment results in deriving the expected collateral value of the assets, as well as estimating the time required and developing the strategy for monetising these assets in their CFPs.

AIs are reminded that, subject to the HKMA's agreement, their corporate loans may be used as collateral for obtaining contingency funding from the HKMA under the Contingent Term Facility (CTF) within the HKMA Liquidity Facilities Framework² during periods of extraordinary liquidity stress. In this connection, AIs should seek to refrain from inclusion of any terms of corporate loans they underwrite or refinance that may create impediments to the assignment of rights (e.g. need to consult or obtain consent from another party), or to the disclosure of loan-related information, to the HKMA. AIs are also encouraged to consider including a "security over lender's rights" provision in the terms of their corporate loans, to explicitly permit the creation of security over such loans for tapping the CTF.

10. *Capability to generate timely liquidity information* – Timely liquidity information is essential for AIs' senior management to make proper decisions speedily in times of stress. Some AIs have established systems capable of generating key balance sheet information particularly deposit movements, and availability of funds and unencumbered assets within a very short time period (e.g. less than an hour), and providing frequent updates and projections of their liquidity positions. This information is also useful for the HKMA to assess AIs' situations when liquidity shocks emerge, and discuss with them if follow-up actions are necessary.

Furthermore, stressed situations often come with market dislocations and incidents which dry up the liquidity of certain types of financial instruments or segments of the financial markets. Having regard to the specific circumstances

² See HKMA circular "HKMA Liquidity Facilities Framework", August 2019, for details.

and developments, AIs are expected to step up the assessment of liquid assets which are included in the calculation of their statutory liquidity ratios³ to ascertain ongoing eligibility of such assets. The HKMA may, on an ad hoc basis, require AIs to report their statutory liquidity ratios adjusted for such circumstances and developments, especially if the AIs have high concentration in the concerned liquid assets or if a substantial portion of the AIs' liquid assets are intended to be held to maturity. It is therefore important for AIs to have the system capability and agility to calculate and report the adjusted ratios accordingly at short notice.

11. *Role of internal audit function* – AIs' internal audit function plays an important role in ascertaining the feasibility of CFPs and operational readiness of the AIs to execute the plans. Some AIs have actively engaged their internal audit function to take part in the drills on CFPs and review the relevant processes either holistically or focusing on specific areas (e.g. comprehensiveness, internal communication and coordination, and speed of execution etc.), with a view to identifying deficiencies and areas where enhancements could be made. The internal audit function of these AIs has also assessed the effectiveness of follow-up actions which aimed to improve the AIs' CFPs.

Given the importance of potential collateral for AIs to obtain contingency funding in times of stress, the internal audit function is expected to verify regularly the availability of the relevant information at short notice and the accuracy of such information.

III. Monitoring tools

12. *Unencumbered asset availability* – In times of stress, AIs may need to monetise their unencumbered assets to meet liquidity demand. In addition to the amount of unencumbered assets, some AIs have also adopted other metrics (e.g. asset encumbered ratio and secured funding ratio) to monitor and evaluate their capacity to obtain secured funding in stressed periods.
13. *Liquid asset concentration* – AIs are required to set internal limits to manage the concentration of their liquid assets with respect to various dimensions, including asset class, type of issue, issuer and currency. When calibrating these limits, some AIs have conducted in-depth analyses of their own funding and business profiles, and characteristics of the assets and the relevant markets etc. These AIs have also reviewed the concentration limits regularly so that they would remain appropriate as the AIs' profiles and markets evolve (e.g. when there is an emerging concern or sign that certain assets are becoming less liquid). To this end, AIs are expected to conduct frequent and comprehensive reviews and, where necessary, adjust the limits when the markets exhibit abrupt changes.

³ High quality liquid assets (HQLA) for Category 1 institutions and liquefiable assets for Category 2 and Category 2A institutions.

14. *Deposit concentration and stability* – Some AIs have adopted comprehensive approaches for identifying and monitoring deposit concentration risks. Besides the dimensions mentioned in paragraph 3 above, the AIs have analysed other characteristics and incorporated them in monitoring the composition of deposit bases, such as the length of relationship with the AIs, the number of banking products offered to the depositors, deposit amount and historical volatility thereof.

In addition, some AIs have regularly assessed the stability of different deposit types under various market conditions and interest rate environments, taking into account both contractual and behavioural characteristics. These analyses have provided the AIs with a deeper understanding of the profiles of their deposit bases, enabling them to establish appropriate limits and devise strategies to avoid undue concentration. The AIs have also made reference to the results of such analyses in designing stress scenarios.

15. *Fund flows outside business hours* – In relation to liquidity management outside business hours, AIs have generally stepped up surveillance of fund flows with some of them having adopted automated tools for round-the-clock monitoring. Many AIs have also established escalation procedures (e.g. when outflow has exceeded the predefined threshold) and action plans for handling contingencies during non-business hours (e.g. notification to customers and public communication).
16. *Market sentiment monitoring* – AIs have generally adopted tools to monitor market sentiment closely and identify discussions in social media that may indicate a change in sentiment on them or the broader banking system. Many AIs have implemented a daily monitoring approach with reports circulated to their senior management for attention. Some AIs have taken further steps by enabling 24/7 monitoring and dissemination of alerts by leveraging big data analytics to track nearly real-time mentions of the AIs and assess market sentiment on social media platforms.

To support evaluation of the circumstances and the need to take actions in response, some AIs have developed quantitative indicators (e.g. click-through rates, and the numbers of mentions, negative comments and media inquiries received) and established thresholds based on past incidents.