

Evolving Dynamics of Banks' Funding and Liquidity Management

By Fann Shar Linn and Vincent Ang

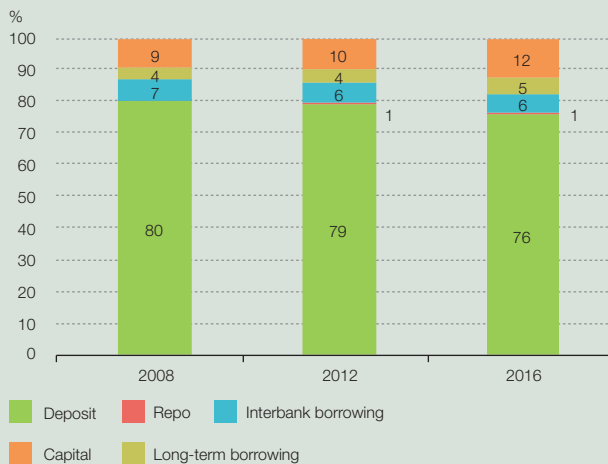
The transformation of the Malaysian financial landscape over the last few decades has been one marked by deeper and more active markets, greater economic openness and increasingly sophisticated participants. Collectively, these changes have had a significant impact on bank funding structures, the nature of market liquidity and the manner in which banks manage associated risks. The present dynamism of liquidity risk management warrants a re-thinking of the traditional indicators used to determine funding stability in relation to asset growth. This article explores this issue, along with how banks have progressively adapted their liquidity risk management practices to a changing market environment.

Up until the early 2000s, banks relied primarily on customer deposits (from both the wholesale and retail segments) for funding. By the turn of the millennium, customer deposits accounted for 82% of total funding liabilities within the banking system. This in part reflected the high savings rate at the time, which had averaged at 36.6% of total gross national income (GNI) throughout the 90s (2016: 28.8% of GNI). Investment options, particularly those for retail depositors, had also been relatively scarce in the previous decade. From 2000 to 2005, the average outstanding size of the unit trust/asset management market was 13.8% of total liquid financial assets, compared to 23.5% as at end-2016. Additionally, banking assets were chunkier, with a significant proportion (34% of total assets) comprising corporate loans with long gestation periods.

This stands in stark contrast to bank balance sheets today, which have been radically transformed by three key developments in the financial system. Firstly, Malaysia's capital markets have grown significantly in size and depth. This development has enabled financial institutions and investors to diversify funding and investment strategies through expanded funding sources from the bond and equity markets (Chart 1 and Chart 2). From 2010 to 2016, the Malaysian corporate bond market expanded at an annual rate of 9%. In the same period, the equity market grew by 11% annually in terms of market capitalisation. Second, greater economic and financial integration has seen Malaysian banks expanding their regional footprint in line with growing trade linkages within Asia. Between 2012 and 2016, the overseas assets of Malaysian banks grew at a compounded annual growth rate of 16%. Continued flows of foreign direct investment and financial integration have also broadened the role and functions of banks, both

Chart 1

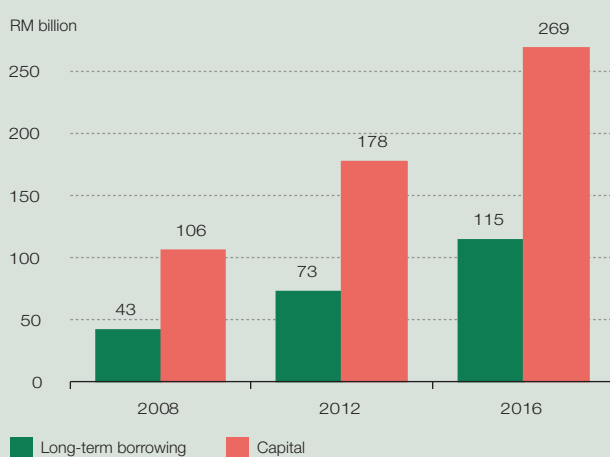
Banking System: Composition of Funding Sources



Source: Bank Negara Malaysia

Chart 2

Banking System: Capital and Long-term Borrowing



Source: Bank Negara Malaysia

at home and abroad. These developments have afforded banks greater flexibility in managing liquidity risk, supported by innovations in products and risk management. Finally, these changes are set against a backdrop of wealthier and more sophisticated financial consumers who are better enabled to make optimal financial choices through an expanded offering of financial products and an increasingly digitised economy. This, along with lower savings and higher consumer activism, has reduced the relative stability of customer deposits and contributed to a gradual shift to a broader funding base for banks.

Indicators of Liquidity Risk

The relevance of the **loan-to-deposit ratio (LDR)** as an indicator of liquidity risk depended on an environment where (i) deposits were significantly more stable; and (ii) chunky and illiquid loans constituted the main bulk of a bank's assets. A high LDR implied that the bank may be taking on higher liquidity risk by growing loans faster than it can fund them through deposits. Today, however, the LDR presents liquidity risk in a severely limited context. In particular, the LDR does not reflect the increasing diversification of funding sources and tenors in tandem with loan growth. This in turn results in an overestimation of liquidity risk.

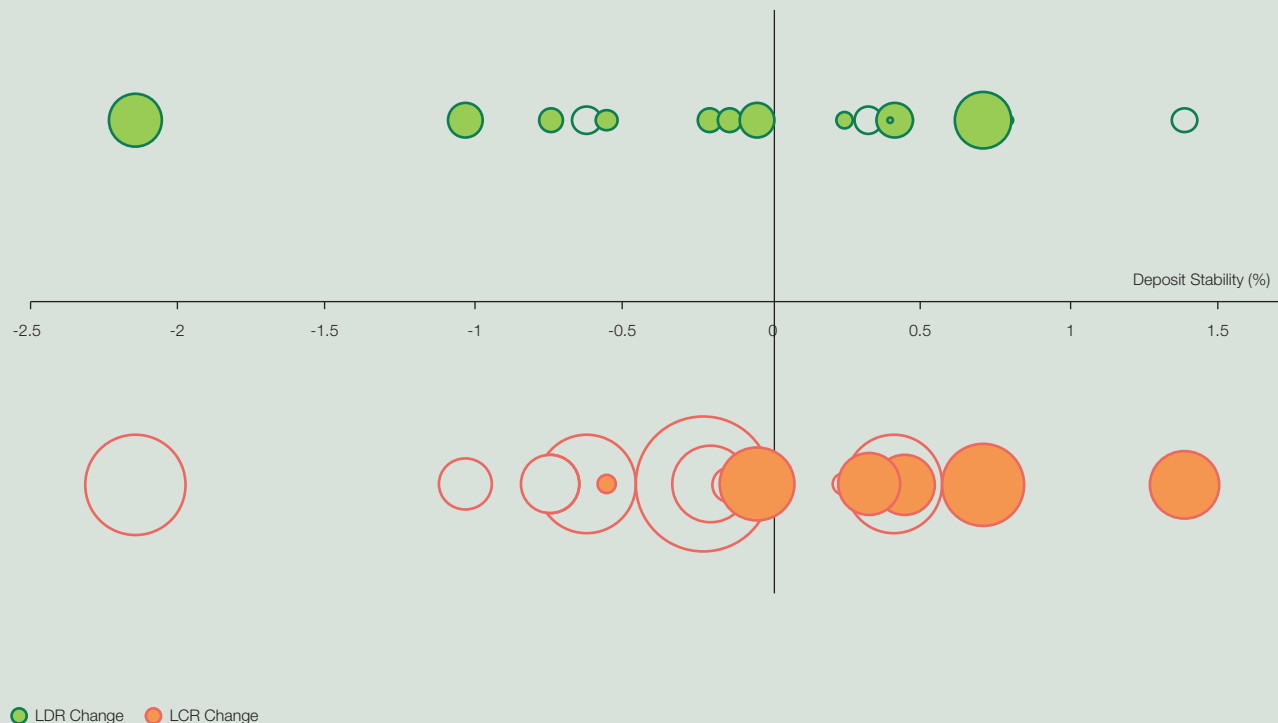
It is important to note that the LDR's fundamental assumption that deposits are a stable form of funding no longer holds for all types of depositors, taking into account factors such as level of sophistication, yield-sensitivity and available investment alternatives that have developed over time. Technological progress has also played a key role in accelerating the mobility of deposit funds, chiefly through reducing the cost of funds transfers and providing financial consumers with greater, immediate access to product-related information that influences their savings and investment decisions. More recent liquidity risk frameworks and ratios enable a more granular assessment of highly varied behavioural patterns among depositors, as discussed later in this article.

On the asset side, the LDR does not consider the greater mix between various loan types, securities and other investments that is characteristic of most bank balance sheets today. While loans continue to be a dominant component, it is important to account for, and measure, the liquidity value of these and other assets. The availability of secondary markets, supported by market developments in securitisation, allow banks to bolster their liquidity positions through asset-side adjustments, as opposed to the liability-side dependence assumed under the LDR. Reliance on loans as the sole proxy for funding needs could result in a significantly inaccurate measure of liquidity risk, including the underestimation of risk arising from off-balance sheet obligations.

Recognising the need for a more encompassing and granular approach towards measuring liquidity risk, the Bank introduced the **Liquidity Framework (LF)** in 1998. The LF requires banks to project potential cash flows for up to a year by determining the contractual and behavioural maturity of assets, liabilities and off-balance sheet items. This captures the maturity transformation undertaken by a bank more comprehensively, and flags any significant maturity gaps. To ensure that there are sufficient funding buffers within the short timeframe in which liquidity pressures can develop, the framework enforces a minimum net liquidity surplus of 3% for maturities up to 1 week, and 5% for the one-week to one-month maturity bucket. Additionally, the LF defines a set of 'liquefiable assets' – assets that are deemed to be of sufficient quality to be liquidated without a significant loss in value, even under stressed conditions.

The **Liquidity Coverage Ratio (LCR)**, a component of the Basel III regulatory reforms, builds on the conceptual foundations of the LF. The LCR standard, which has been in force in Malaysia since June 2015, ensures that banks have sufficient high-quality liquid assets (HQLA) that can be used to satisfy liquidity needs in a 30-day severe stress environment. The assumptions used for this scenario are modelled on observations from the 2008 global financial crisis. The LCR considers a broader range of factors that can affect funding stability compared to the LF. These include the type of counterparty, transaction tenor and redemption features of a specific product. As shown in Chart 3, increasing deposit stability is more closely correlated to an improvement in the LCR compared to that in the LDR. On the other hand, HQLA – similar to liquefiable assets under the LF – are broken down into three categories ranked according to quality and potential liquidity value under stressed conditions. Assets are classified based on features such as credit rating, ease and certainty of valuation, and the size and volume of a particular asset market.

Chart 3

LDR versus LCR: Sensitivity to Deposit Stability

Notes: The sample used for the chart above is the largest 20 banks in Malaysia by deposit size, each of which is represented by a bubble. Shaded bubbles represent an increasing LDR or LCR, while empty bubbles represent a decreasing LDR or LCR. The size of each bubble represents the size of change of these ratios between December 2015 and December 2016. "Deposit Stability (%)" is the difference in the average monthly movements of total deposits between 2015 and 2016. Moving along the x-axis from left to right represents increasing deposit stability.

The chart shows that deposit stability is more closely correlated with the LCR compared to the LDR. This is demonstrated by the difference between the concentration of green and orange bubbles: Green (shaded) bubbles are more dispersed across the spectrum, indicating that there is a weak relationship between the LDR and deposit stability. Orange (shaded) bubbles are concentrated to the right of the x-axis, which indicates that an increase in deposit stability tends to correlate with an improvement in the LCR.

Source: Bank Negara Malaysia

As markets become more familiar with its underpinning concepts, the LCR will eventually become an important liquidity indicator. In the meantime, however, inconsistent disclosure practices across jurisdictions affect comparability, thus constraining wider use of the LCR by market participants and rating agencies. While this is expected to be resolved over time, the need for a simple and reliable ratio was recognised by the Bank, and met with the publication of the **loan-to-fund (LTF)** and **loan-to-fund-and-equity (LTFE)** ratios in 2015 to better reflect material changes in bank funding structures over time that had rendered the LDR inaccurate. The ratios, which are disclosed in the Bank's monthly publication of Monetary and Financial Developments, improve on the LDR as a measurement of liquidity by reflecting the broader funding base of banks, and can be easily determined from available financial information on individual banks. The LTF includes debt issuances in addition to deposits, while the LTFE expands on this with the inclusion of equity.

Going forward, the Bank plans to introduce the **Net Stable Funding Ratio (NSFR)**, a complement to the LCR under the Basel III liquidity reforms. Similar to the LF, the NSFR provides a one-year projection of maturity profiles for both assets and liabilities under business-as-usual conditions. In particular, the NSFR improves on the LF by estimating the amount of stable funding that a bank requires to fund various assets and off-balance sheet items, depending on factors such as asset quality, transaction tenor, counterparty type, encumbrance period and the likelihood of honouring non-contractual obligations.

As understanding and familiarity with improved liquidity risk indicators such as the LCR and NSFR increases, these should provide a richer framework for conveying information on liquidity risks. The Bank will continuously enhance the data that it publishes on a regular basis to take these developments into account, with the aim to better inform markets.

Liquidity Risk Management Practices

It is important that the use of liquidity risk indicators also be approached within the context of liquidity risk management practices of individual banks. This is the principal objective of enhanced liquidity risk management disclosures required as part of key information to be included in banks' financial statements.

Observations from a closer examination of the practices of Malaysian banks point to sustained improvements in their internal procedures, practices and systems over time as part of a broader effort to enhance their resilience against liquidity risk. These include refinements in the areas of governance, stress-testing, contingency funding plans and funds transfer pricing (FTP).

On governance, the board of directors and senior management of banks have taken an increasingly forward-looking and comprehensive approach towards managing liquidity risk. This includes establishing risk appetites and liquidity strategies that consider emerging liquidity concerns, inter-linkages of liquidity risk with other areas of risk (e.g. credit, market and reputational) and the potential impact of the bank's actions on broader systemic risk. This has improved the calibration and sensitivity of internal risk appetites, thus enhancing the agility of banks in responding to adverse market developments.

Compared to the previous decade, FTP is now common practice across the industry; contributing significantly to the integration of liquidity risk management within day-to-day banking operations. Based on supervisory observations, larger banks in particular have made substantial progress in improving the granularity and sensitivity of pricing methodologies. Best practices include highly differentiated pricing of liquidity according to various measures of funding stability and asset quality. On a whole, these practices have enabled banks to implement better incentive systems that reward business units which attract stable funding, and adequately charge those that generate illiquid assets.

Internal liquidity stress tests have also advanced considerably beyond the more rudimentary sensitivity analyses of the past. Banks have been moving towards an increasingly sophisticated approach in identifying potential liquidity risk events, particularly those that are unique to specific banking operations. These are typically events of low frequency, but high severity. Stress-testing by banks are also now modelled on a range of assumptions that incorporates idiosyncratic events, severe disruptions to markets that the bank is active in and other inter-linked markets, and the second-round effects of shocks. Banks have also improved their utilisation of stress test outcomes, particularly in formulating mitigating measures such as contingency funding plans, risk policies and quantitative limits to address identified vulnerabilities.

Beyond Ratios and Minimum Requirements

An over-reliance on simplified indicators such as the LDR is likely to induce market reactions or behaviours that are disruptive, particularly where they fail to provide an accurate representation of evolving bank balance sheets and funding strategies. This was observed towards the end of 2015, where a year-end fixation on LDR was a significant contributory factor to deposit competition which ultimately saw the spread between the overnight policy rate (OPR) and KLIBOR rates diverge materially from historical averages. In a highly dynamic market environment, managing liquidity risk requires clear internal risk policies, a close and functioning relationship between various business and control functions and adequate investments in data systems and technical competencies. It is through these broader accomplishments, supported by effective regulatory compliance, that banks will ensure their resilience through the challenges posed by different business cycles over the years to come.