



## Prudential Liquidity Standards in Asia

Since the outbreak of the global financial crisis, regulators have increased their focus on the ability of banks to measure and manage liquidity risk. In December 2009, the Basel Committee on Banking Supervision (“the Basel Committee”) identified “ineffective” liquidity management as a key characteristic of the crisis and highlighted the lack of attention that liquidity risk received relative to other risks prior to the crisis.<sup>1</sup> Recognizing the key role of illiquidity in the crisis, the Basel Committee included two global minimum liquidity standards as part of the recently announced Basel III supervisory framework to be implemented over the next seven years.<sup>2</sup> Notably, regulators in a number of Asian economies have had prudential liquidity standards in place for many years. This *Asia Focus* report defines liquidity and liquidity risk, examines some common prudential liquidity standards in key Asian economies, and briefly considers the potential impact of the proposed Basel III standards on global liquidity risk management.

### Liquidity and Liquidity Risk

Banking regulators generally define liquidity as a bank’s ability to fund its operations and meet its obligations, expected or unexpected. Liquidity risk is the chance that a bank will be unable to meet these requirements and will face losses as a result. More specifically, banks face two main types of liquidity risk: funding liquidity risk, which is the risk of being unable to obtain necessary funds at a reasonable cost; and asset liquidity risk, which is the risk of being unable to liquidate assets as necessary and at an acceptable price. Liquidity risk is fundamental to the business of banks and other financial intermediaries, which raise money through liabilities such as deposits or borrowings to fund the creation or purchase of earning assets such as loans or securities.

To manage liquidity risk, banks must balance their portfolios of assets and liabilities, while considering the trade-off between return and liquidity on the asset side, and cost, ease of procurement, and volatility on the liability side. Assets with relatively higher returns tend to be less liquid and therefore more difficult to sell if a bank needs to raise funds. Liabilities with higher costs, such as brokered deposits, can generally provide funds

quickly, but are often volatile as providers may withdraw funds quickly to earn higher returns elsewhere. Banking regulators supervise banks’ liquidity risk management on a continual basis by requiring banks to use a variety of qualitative and quantitative tools to monitor and measure liquidity. One common tool regulators use is a prudential liquidity standard, typically a numerical benchmark that establishes a maximum or minimum level of assets and liabilities that banks must hold. Most regulators also require banks to meet a broader set of liquidity requirements and expectations to supplement these numerical requirements (*Figure 1*).

### Figure 1 – Alternative Liquidity Standards, Requirements and Expectations

Although most regulators in Asia impose some degree of prudential liquidity standards that are explicitly stated in guidelines, regulations or laws, regulators also rely on a number of less explicit standards, requirements and expectations. These typically reflect the size and complexity of a bank’s operations, as well as the sophistication of its liquidity risk management policies and procedures.

For example, Japan’s Financial Services Agency (JFSA), which does not require banks to meet any specific prudential liquidity standard or benchmark, publishes broad guidelines that it expects banks to follow in managing their liquidity risk. These guidelines include the development of a liquidity risk management system that is “appropriate” and “suited to the financial institution’s strategic objectives, the scale and nature of its business, and its risk profile.”<sup>3</sup> The *Bangko Sentral ng Pilipinas* (BSP) follows a similar approach. It also does not require banks to use specific liquidity ratios but expects them to use an appropriate combination of “simple calculations, static simulations based on current holdings, or sophisticated models.”<sup>4</sup> Regulators in the United States encourage banks to rely on a similar basket of tools to measure and manage liquidity risk, without requiring specific prudential benchmarks or standards (*Figure 2*).

Even where regulators do require such benchmarks or standards, however, most also require banks to supplement these with an appropriate combination of internal standards and other techniques to manage their liquidity risk.

## Prudential Liquidity Standards in Asia

Most banking regulators in Asia require banks to meet at least one prudential liquidity standard (*Figure 2*). Prudential standards are typically described in official regulatory guidance or in relevant laws and regulations governing the banking sector in a given economy. The most common prudential liquidity standard is to require banks to adhere to a fixed ratio of a specific class of assets relative to a specific class of liabilities (*e.g.*, current assets to current liabilities). Depending on the type of assets and liabilities the regulator decides to include in this ratio, an institution may be required to maintain a minimum or a maximum amount of a certain type of asset. This type of standard is static in that it measures a ratio of assets to liabilities at a given point in time. A second common prudential liquidity standard is to require financial institutions to adjust assets and liabilities over a period of time to estimate their liquidity position and cash flows under various scenarios. These scenarios typically include changes to assets and liabilities during normal and abnormal business conditions, such as during a crisis. This type of standard is dynamic in that it produces a ratio based upon estimated future changes in assets and liabilities.

### Static Liquidity Standards

Static liquidity ratios may be broadly categorized into minimum and maximum ratios. The most common minimum ratio in use in Asia measures the proportion of liquid assets to a certain class of liabilities. Although the definition of “liquid” varies among regulators, common examples of liquid assets include cash, gold, government securities, short-term lending to other banks, and a number of other easily liquefiable and unencumbered assets.<sup>5</sup> Regulators in the majority of Asian economies employ some variation of a liquidity ratio that requires a

minimum level of liquid assets measured against specific liabilities.

Regulators in China, Hong Kong, India, South Korea, Taiwan and Thailand apply a “one-size-fits-all” minimum liquid asset ratio which all banks under their supervision must meet on a regular basis. The China Banking Regulatory Commission (CBRC), for example, requires that banks meet a minimum liquidity ratio of 25%.<sup>6</sup> The Hong Kong Monetary Authority requires institutions to hold as of the end of each month at least 25% of one-month liabilities in easily liquefiable assets.<sup>7</sup> The Reserve Bank of India (RBI) requires all institutions to hold enough liquid assets to cover at least 25% of demand and time deposits, although the RBI may increase this ratio to as high as 40%.<sup>8</sup> South Korea’s banking regulators, the Financial Supervisory Commission and the Financial Supervisory Service, require banks to maintain a one-to-one ratio of Korean won-denominated current assets to won-denominated current liabilities.<sup>9</sup> Taiwan’s central bank, the Central Bank of the Republic of China (Taiwan), requires banks to maintain at least 7% of deposits and other designated liabilities in liquid assets.<sup>10</sup> The Bank of Thailand requires banks to maintain at least 6% of all deposits and borrowings in liquid assets.<sup>11</sup>

The Monetary Authority of Singapore’s (MAS) application of its minimum liquid asset ratio differs slightly from other regulators in that the MAS requires banks to meet a risk-based minimum liquid asset ratio that reflects the sophistication of the bank’s liquidity risk management. In general, banks are required to hold 16% of qualifying liabilities in liquid assets on a daily basis.<sup>12</sup> However, banks may apply for an alternative approach

**Figure 2 – Comparative Prudential Liquidity Requirements in Asia and the United States**

Economy	Key Liquidity Ratio(s)	Requirement
China	1. Loans / Deposits 2. Liquid Asset Ratio	1. $\leq 75\%$ 2. $\geq 25\%$
Hong Kong	Liquefiable Assets/ Qualifying Assets	$\geq 25\%$
India	Liquid Assets / Demand and Time Liabilities	$\geq 25\%$ (40% max.)
Japan	No Specific Ratio (see <i>Figure 1</i> )	None
Malaysia	Minimum Net Asset Requirement	1. Positive net asset position assuming 3% deposit runoff over a week 2. Positive net asset position assuming a 5% deposit runoff over a month
Philippines	No Specific Ratio <sup>13</sup> (see <i>Figure 1</i> )	None
Singapore	Liquid Assets / Qualifying Liabilities	1. Bank-Specific: 10% to 15% 2. Bank-General: $\geq 16\%$ 3. Bank Basic: $\geq 18\%$
South Korea	1. Current Won Assets / Current Won Liabilities 2. Won Loans / Won Deposits (effective 2014)	1. $\geq 100\%$ 2. $\leq 100\%$
Taiwan	New Taiwan Dollar Liquid Assets / New Taiwan Dollar Liabilities	$\geq 7\%$
Thailand	Liquid Assets / Deposits and Borrowings	$\geq 6\%$
United States	No Specific Ratio (see <i>Figure 1</i> )	None

Source: Financial regulatory authorities and laws and regulations of the respective economies.

Note: This chart is not comprehensive and includes only the most common liquidity ratios in use by regulators and banks in Asia.

**Figure 3 – Proposed Liquidity Standards Under Basel III**

Ratio	Description	Implementation Timeline
Liquidity Coverage Ratio (LCR)	High Quality Liquid Assets / Net Cash Outflows (30-day period) $\geq 100\%$	Observation Period: January 1, 2011 Formal Implementation: January 1, 2015
Net Stable Funding Ratio (NSFR)	Amount of Available Stable Funding / Amount of Required Stable Funding $\geq 100\%$	Observation Period: January 1, 2011 Formal Implementation: January 1, 2018

Source: Basel Committee on Banking Supervision

under which they are required to maintain the higher of (i) a bank-specific ratio assigned by the MAS that is between 10% and 15% of qualifying liabilities, or (ii) an amount based on calculation that considers a bank’s historical cash flow volatility. Banks unable to comply with either of these two approaches may apply for a “bank basic” approach, which requires them to maintain an average liquid assets ratio of 18% over a two-week period rather than on a daily basis.

A common maximum liquidity ratio utilized in Asia is the loan-to-deposit ratio, which restricts an institution’s lending to a specified percentage of deposits. For example, the CBRC imposes a loan-to-deposit ratio that limits banks’ lending to no more than 75% of their total deposits. Korean regulators plan to impose a similar statutory restriction on Korean banks with more than KRW 2 trillion (USD 1.8 billion) in loans beginning in 2014.<sup>14</sup> Once the restriction takes effect, domestic currency lending of relevant banks will be capped at 100% of their domestic currency deposits.

#### *Dynamic Liquidity Standards*

Bank Negara Malaysia (BNM) is one of the few regulators in Asia that requires financial institutions to meet a specific dynamic liquidity ratio.<sup>15</sup> BNM adopted this approach following the 1997-98 Asian Financial Crisis, when it replaced a mandatory minimum liquid asset ratio with a new “liquidity framework” that “does not emphasize rigid compliance with a particular liquidity ratio.”<sup>16</sup> Instead, the approach focuses on a bank’s ability to maintain enough liquid assets to cover short-term cash outflows. A key feature of the liquidity framework is an assessment that considers an institution’s ability to maintain adequate liquidity over both the normal course of business and in the event of a sudden withdrawal of funds as might occur during a crisis.<sup>17</sup> As part of the assessment, banks are required to categorize assets and liabilities into one of six “maturity buckets” ranging from periods of less than one week to more than one year.<sup>18</sup> This allows banks to determine their net maturity mismatch: whether more assets or liabilities will mature at different points in the future.<sup>19</sup> Banks are then required to calculate their net maturity mismatch under two scenarios: (i) the sudden withdrawal of 3% of deposits over a one week period; (ii) and the sudden withdrawal of 5% of

deposits over a one month period. Under both scenarios banks must ensure that they hold enough liquid assets or have access to sufficient lines of credit to maintain a positive net maturity mismatch. This ensures that banks hold sufficient liquidity to cover any sudden liquidity outflows over the course of one month, as might occur during a crisis.

#### **Moving Toward Global Liquidity Standards**

The lack of institutional and system-level liquidity during the recent global financial crisis has led regulators to increase their focus on liquidity risk. As a result of this increased focus, regulators agreed to work towards stronger internationally harmonized liquidity standards. The Basel Committee, which comprises senior supervisory and central bank officials from 27 economies, has led this effort as part of a larger set of reform measures to strengthen global capital and liquidity rules.<sup>20</sup> These reforms, known as the Basel III Framework, introduce two new liquidity ratios as well as a set of common metrics that national regulators can use to identify and monitor liquidity risks at both bank and system levels.

The first of the two new liquidity ratios, the Liquidity Coverage Ratio (LCR), is intended to serve as a gauge of short-term liquidity. The LCR resembles the dynamic liquidity ratios discussed above in that it measures a bank’s liquidity position given a sudden short-term outflow of liabilities. Specifically, it reflects a bank’s ability to convert high-quality, unencumbered liquid assets to cash to offset projected cash flows during a one-month period (*Figure 3*). Banks will be required to calculate these projected outflows based on a scenario set by supervisors and regulators that will incorporate conditions similar to those experienced during the crisis.

The second ratio introduced under Basel III is the Net Stable Funding Ratio (NSFR), which will serve as a gauge of a bank’s long-term liquidity. The NSFR is also similar to the dynamic liquidity ratios discussed above in that it requires banks to estimate the behavior of certain assets and liabilities over time. However, the components of the ratio’s numerator and denominator differ from those of the ratios considered above, and the one-

year time frame is considerably longer than the short-term time frame currently employed by many regulators in Asia and other countries. Although the ratio's calculation is somewhat complex, it essentially requires banks to maintain enough funding that is expected to be stable to cover potential uses of funds over a one-year period. The components of both the numerator and denominator are weighted to reflect their inherent liquidity risk.

Although neither ratio will be fully implemented until later this decade, regulators began an observation period on January 1, 2011. During this period, regulators will monitor the ratios for banks that they determine will be subject to the new requirements.<sup>21</sup> Regulators will also continue to review the potential implications of these standards, leaving themselves time to address any unintended and adverse consequences prior to full implementation.<sup>22</sup>

## Conclusion

Because the observation period for the two new global liquidity ratios began only a few months ago, it is difficult to judge the likely overall impact of the new standards on global liquidity risk management and crisis prevention. Further, many details regarding full implementations have yet to be finalized by regulators at the national level. Despite the uncertainty regarding the standards' final form, it is clear that the goal of the standards is to "significantly reduce the probability and severity of banking crises in the future."<sup>23</sup> Notably, some observers have argued that Asian regulators' early focus on prudential liquidity standards was one factor that helped the region avoid the worst of the global financial crisis.<sup>24</sup> Although these standards may have contributed to the relative lack of liquidity problems in Asia during the crisis, regulators are moving towards adopting even stronger uniform standards at a global level.

---

### Endnotes

1. Basel Committee on Banking Supervision. "Consultative Document: International framework for liquidity risk measurement, standards and monitoring." December 2009.
2. The Basel III framework builds upon the existing Basel II framework, which served primarily as a set of standards governing the capital adequacy of internationally active banks and did not specifically address liquidity risk.
3. Japan Financial Services Agency. "Inspection Manual for Deposit-Taking Institutions." February 2007.
4. *Bangko Sentral ng Pilipinas*. "Guidelines on Liquidity Risk Management." September 2006.
5. Various regulatory definitions and characteristics of liquid assets are discussed in subsequent end notes. Unencumbered assets are those that the bank has not pledged as collateral against other borrowings.
6. China Banking Regulatory Commission. Press release on "CBRC issued the Guidance on Liquidity Risk Management of Commercial Banks." November 4, 2009.
7. Hong Kong Monetary Authority. Section 4 of the "Supervisory Policy Manual for Liquidity Risk Management." Liquid assets include currency and notes, gold, net one-month lending to other financial institutions, export bills, marketable debt securities, eligible loan repayments, and residential mortgage loans covered by an irrevocable purchase commitment by the Hong Kong Mortgage Corporation. One-month liabilities include net one-month borrowing from other financial institutions and the total of other one-month liabilities.
8. Reserve Bank of India. "Master Circular RBI/2004/100 on the Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR)." August 5, 2004.

Liquid assets include cash, gold, and other unencumbered securities as approved by the RBI.

9. Korea Financial Services Commission. Article 26 of the "Regulation on Supervision of Banking Business." (last amended on August 18, 2010).

10. Central Bank of the Republic of China (Taiwan). "Directions for Auditing Liquidity of Financial Institutions;" and Michael M.K. Lin. "Liquidity Measurement and Practices in Taiwan" in *Liquidity Measurement and Management in the SEACEN Countries*. Kuala Lumpur, Malaysia. 2010. Designated liabilities include checking, demand, savings, time, and Government Treasury deposits, as well as any net funds due to banks in the call loan market, bills/bonds sold under repurchase agreements, and principal received from the sale of structured products by the bank. Liquid assets include excess reserves with the central bank, net dues from other banks in the call loan market, certain re-deposits at designated banks, CDs issued by the central bank, government bonds, treasury bills, and other designated bonds, net negotiable CDs, and a number of other assets.

11. Part VII, Section 64 of the "Financial Institutions Business Act."

12. Monetary Authority of Singapore. "MAS Notice 613" (last revised on July 29, 2010). Liquid assets include Singapore dollar (SGD)-denominated cash and coin, Singapore government securities, certain SGD-denominated debt securities or *sukuk*, and certain bills of exchange. Qualifying liabilities include the total of all SGD-denominated liabilities due to non-bank customers; SGD-denominated liabilities due to the MAS or other banks within one-month of the date of computation of the ratio; 15% of all undrawn SGD-denominated commitments; all liabilities arising from the issue of bills of exchange or the operation of any stored value facility.

13. Although the *Bangko Sentral ng Pilipinas* does not require banks to meet a specific liquidity ratio, it does require that they maintain a designated amount of reserves with the central bank in excess of required reserves.

14. Korea Financial Supervisory Service. Article 26 of the "Regulations on Supervision of Banking Business." Exchange rate is the interbank rate as of January 31, 2011 (KRW 1,113.96 = USD 1.00).

15. The Central Bank of the Republic of China (Taiwan) and the China Banking Regulatory Commission (CBRC) also impose minimum net funding gap positions over a one-month and 90-day period, respectively. Taiwan's requirement prohibits bank's funding gap from exceeding -5% for commercial banks to -15% for the export-import bank. The CBRC's requirement limits a bank's liquidity gap to less than 10% of on- and off-balance sheet assets with a maturity of less than 90-days. Other regulators in Asia require or advise banks to calculate similar net maturity mismatch or funding gap ratios but do not require that they meet a specific benchmark.

16. Bank Negara Malaysia. Prudential Financial Policy Department Guidelines BNM/RH/GL 001-07, "Liquidity Framework."

17. The framework also considers a bank's dependence on potential volatile funding sources such as large customer deposits, interbank borrowings, and offshore markets.

18. This categorization requirement covers both on- and off-balance sheet assets and liabilities.

19. Banks with more assets than liabilities maturing on a certain future date will need to seek new assets to replace those that matured. If the amount of liabilities maturing exceeds the amount of maturing assets, then a bank will need to seek new funding sources to finance its excess assets.

20. Economies represented on the Committee include Argentina, Australia, Belgium, Brazil, Canada, China, France, Germany, Hong Kong SAR, India, Indonesia, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

21. Regulators' application of Basel III is likely to differ slightly across jurisdictions, and discussion is ongoing regarding which banks will be subject to Basel III.

22. Basel Committee on Banking Supervision. "Basel III: A global regulatory framework for more resilient banks and banking systems." December 2010.

23. Chairman of the Basel Committee on Banking Supervision and President of the Netherlands Bank, Nout Wellink, quoted in "Basel III: A global regulatory framework for more resilient banks and banking systems." December 2010.

24. The South East Asian Central Banks (SEACEN) Research and Training Center. *Liquidity Measurement and Management in the SEACEN Countries*. Kuala Lumpur, Malaysia. 2010.

