

Liquidity Regulation in Asia: Are there benefits from Basel?

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ABSTRACT:

The introduction of liquidity regulation standards by the Basel Committee has created considerable concern over potential effects and applicability to emerging market economies. It is argued in this paper that while introduction of some such standards for large banks in Western economies, which had focused prior to the GFC primarily on liability management of the risks arising from excessive liquidity creation has merit, their relevance to most Asian economies is limited. Liquidity regulation needs to take into account domestic institutional arrangements such that a one-size-fits-all international approach is questionable. Most Asian economies already have in place simpler, but arguably equally strong, asset management liquidity requirements which, while no doubt capable of improvement, reflect local conditions.

“EMDEs [Emerging Markets and Developing Economies] are particularly concerned about the Basel III liquidity standards. Many banks in EMDEs are expected to meet the minimum capital requirements. However, the Basel III liquidity framework is expected to lead to implementation challenges for EMDEs due to the limited availability of high quality liquid assets and difficulties in calibrating the framework to suit practices of smaller banks and small jurisdictions.” (BCBS, 2014, page1)

“Overall [for Europe], the data analysis shows that the specification of the general liquidity requirement is not likely to have a material detrimental impact on the stability and orderly functioning of financial markets or on the economy and the stability of the supply of bank lending, with a particular focus on lending to SMEs and on trade financing, including lending under official export credit insurance schemes.” (EBA, 2013)

A decade after the Asian Financial Crisis of 1997-98 turned the attention of Asian regulators to the need for enhanced liquidity risk regulation, the Global Financial Crisis prompted the international regulatory community to also focus upon that topic. Although there had been an ongoing regulatory agenda under the Basel Committee focusing upon capital requirements for credit, market, and operational risks, liquidity risk had received little attention – other than the development of best practice and principles guidelines.

The role of liquidity risk as a key factor in the emergence and transmission of the crisis prompted the release in December 2010 of new liquidity standards by the Basel Committee. Although explicitly aimed at internationally active banks, with a range of liquidity risks including from cross-border and cross-currency activities consolidated at the group level, past experience with capital requirements suggests that these approaches are likely to also be applied to domestic banks. Indeed the Basel Committee (BCBS, 2010, para 187) states that they “may be used for other banks ... to ensure greater consistency and a level playing field between domestic and cross-border banks”. Surveys by the related Financial Stability Institute (2014) of implementation plans by non-Basel Committee members reinforces the view that the liquidity standards are expected to become quasi-obligatory. Unlike the Basel capital requirements, where a “standardised approach” was specified as an alternative for smaller, less sophisticated, banks, no such simpler alternative has been explicitly proposed for liquidity requirements.¹ That is arguably a major shortcoming of the approach although, perhaps more so than in the case of capital standards, the notion that a unique regulatory approach is suitable across diverse institutional banking structures and system liquidity arrangements is arguably simplistic.²

Regulators from eight Asian countries were represented on the Basel Committee at the time the liquidity regulations were developed and published.³ It would be expected that those

¹ The “Alternative Liquidity Arrangements” in the Basel LCR standard refers to system wide alternatives for dealing with shortages of HQLA to meet the LCR, rather than different approaches for different types of banks.

² Even in the case of regulatory capital standards, the Basel standards pay little attention to the logic of requiring subscribed capital in the case of banks which are government owned and guaranteed – as is common in many emerging economies.

³ The Asian countries represented were: Australia, China, Hong Kong SAR, India, Indonesia, Japan, Korea, Singapore. See Table 2 for details on adoption of the new requirements.

countries would be more rapid adopters of the regulations than other non-participants on the Committee, although greater suitability of the regulatory approach to their banking and capital market structures might also be a determinant. And the role of the participants in influencing the shape of the regulations, to reflect their special financial sector features should not be forgotten. In particular, Australia, in conjunction with several others, pushed for the Alternative Liquidity Arrangements (ALAs) adopted as part of the LCR requirement to include a Central Bank Committed Liquidity Facility (CLF) which has been adopted in Australia.

But an obvious question which this paper raises is whether the Basel approach is preferable to the currently existing liquidity regulation applying in Asian economies. One argument may be that the Basel approach aims to capture systemic liquidity risk, rather than just individual bank risk considerations that other common approaches focus upon. The counter-arguments are that systemic risks are likely to vary in nature between economies (such that a “one size fits all” approach is inappropriate), and that dealing with infrequent systemic liquidity crises is better handled by Central Bank system liquidity management arrangements. Another argument is that the Basel approach also attempts to provide incentives which reduce chances of systemic risk arising from interdependencies between financial institutions – such as by effectively penalizing borrowing and lending between financial institutions in liquidity calculations. It also, through the risk-weighting approaches involved, affects the relative attractiveness of different assets and liabilities (in terms of features such as maturities and counterparties) and, arguably, thus induces better bank liquidity risk management.

This paper first examines the rationale for liquidity regulation and then considers how Asian regulators had approached that task prior to the announcement of the Basel 3 initiatives. It then outlines the Basel 3 liquidity regulation arrangements, and reviews the adoption decisions by Asian economies. The potential consequences for banks and economies of introduction of the Basel standards are then considered. The concluding section assesses whether the Basel 3 liquidity requirements, in the form prescribed, are appropriate for widespread application throughout emerging Asian economies, or whether alternative simpler measures are preferable. It is argued that the complex Basel standards, while perhaps having merit in Western economies, have not been shown to be an improvement on simpler approaches already found in most Asian economies.

1. Liquidity Crises – Causes and Consequences

Liquidity crises, at both the individual bank and systemic levels, can be traced to balance sheet mismatches of banks and the existence of asymmetric information in financial markets. Finance theory (see Bouwmann, 2013), and experience, provides the rationale for the need for liquidity (or other) regulation to limit excessive liquidity risk taking at banks.

As shown formally by Diamond and Dybvig (1983), socially valuable liquidity creation can expose, otherwise fundamentally sound, banks to the risk of runs, if perceptions emerge that depositor withdrawal demands cannot be met without fire sales of illiquid assets

(loans).⁴ While deposit insurance can reduce that risk (if only in the case of insured depositors) it also may enable banks to operate with lower levels of liquid assets. Given the opaque nature of banking, the inability of depositors or other bank creditors to identify whether a run at one bank signals more wide-spread problems can lead to contagion.

In response to this problem, Central Banks have (for centuries) adopted the role of Lender of Last Resort, accepting good collateral in exchange for provision of liquidity to solvent, but illiquid banks. But even though such loans are generally made at penalty interest rates, the existence of such a facility provides a “liquidity put” option for banks which can distort the need for banks to self-insure by holding larger amounts of liquid assets. This option also has value when banks relying primarily on “liability management” of liquidity risks find themselves unable to deal with unexpected outflows of funds by purchasing replacement funds in the interbank and capital markets. The fundamental role of Central Bank liquidity facilities and system liquidity management, and the influence these can have on bank liquidity management incentives and risks, needs to be considered in designing liquidity risk regulations. Given institutional differences across countries, a presumption that a “one-size-fits-all” approach is internationally appropriate is open to question.

In modern financial systems liquidity crises involve the interaction of financial intermediaries and markets. *Funding liquidity* risk is the term commonly used to describe the risk arising from the need to replace maturing liabilities in order to maintain funding of existing assets. *Market liquidity* risk is the term commonly used to describe the risk arising from the inability to sell assets currently held into a deep and liquid market without having adverse effects on the price received.

The two risks are interlinked. For example, a shock which leads to a bank facing difficulty in rolling over liabilities can lead to a fire-sale of assets, depressing their price, with the resulting losses having an adverse effect on balance sheet values, in turn creating further funding problems. Collateralisation requirements, such as involved in the financing of assets via repurchase agreements, which have become increasingly important in Western financial systems, provide a direct link between the two types of risk. Brunnermeier (2009) provides a concise explanation of the interaction via what he terms the “loss spiral” and the “margin spiral”, with asset price declines causing increased margin calls (collateralisation demands), prompting further asset sales (to meet those calls) and further asset price declines.

The two types of liquidity risk are of differing importance in economies with financial sectors at different stages of development. Historically, banks managed liquidity risk primarily by holdings of liquid assets (asset management), and regulation typically imposed minimum requirements for such holdings. Of course, such regulation suffered from the “taxi-rank” fallacy – with “liquid assets” becoming “illiquid” because the requirement prevented their

⁴ In addition, banking sector competition can potentially lead to a “maturity rat race” as analysed by Brunnermeier and Oehmke (2013) whereby banks adopt excessively large, socially inefficient, maturity mismatches. Driving this behaviour is the fact that banks may be able to capitalise on (by payment of lower interest rates) the benefit received by shorter term depositors arising from ability to adjust rollover terms in response to new information about default risk.

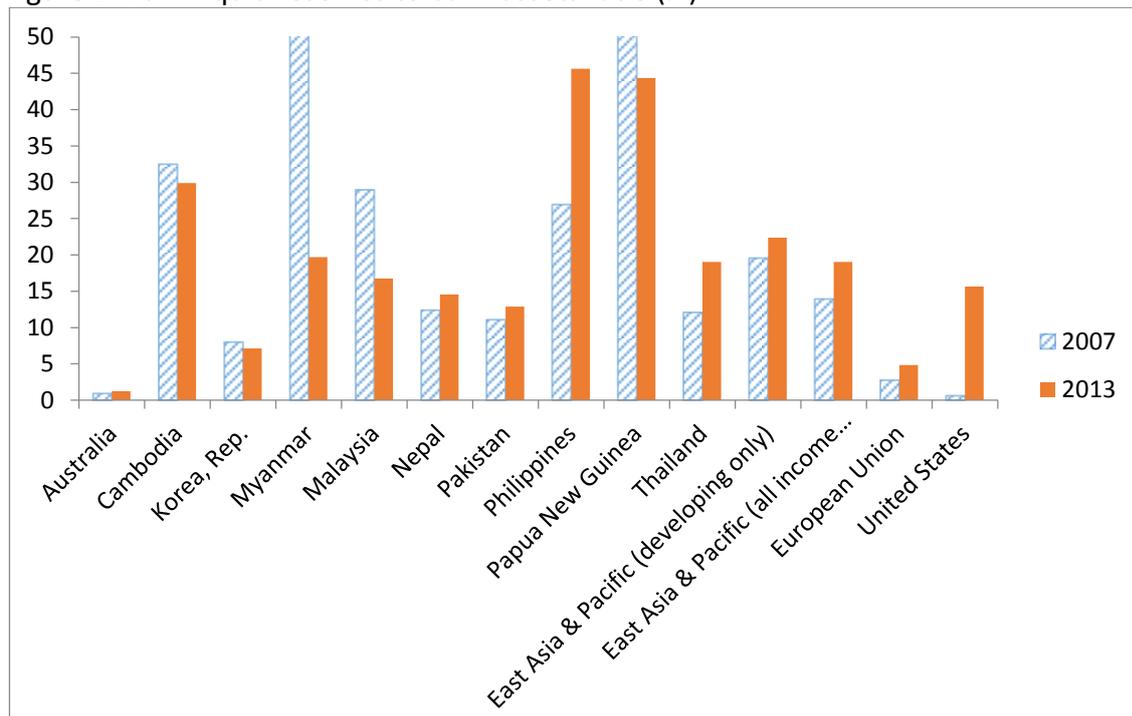
use for meeting outflows of funds.⁵ With financial market development (and deregulation), “liability management” became more prevalent, with banks increasingly using access to interbank and wholesale markets to raise new funds to meet outflows. An important feature of this process was the increasing use of collateralised funding (such as via repos), particularly in investment banking activities, whereby short term funding was obtained and continuously rolled over by pledging of securities held.⁶ Arrangements for accessing liquidity from the Central Bank also influence the relative importance of asset versus liability management.

Figure 1 provides an indication of the differences in the role of liability and asset management across countries. For developed financial markets such as Australia, Hong Kong, and the USA (prior to the GFC) holdings of liquid assets were very small relative to deposit liabilities (and even lower relative to total assets given the importance of debt funding). But even amongst the developed markets, significant differences exist, with Japanese and Singapore banks holding higher liquid assets relative to deposits, and likewise for the USA since the crisis and the introduction of quantitative easing. But for emerging economy markets, the holdings of liquid assets are substantially higher.

One of the features of the Basel 3 liquidity coverage ratio (LCR) requirement (discussed later) is that it places virtually complete emphasis on asset management, by specifying required asset holdings relative to potential cash outflows, with no role allowed for access to funds from capital markets as a source of liquidity management. This reflects the breakdown of such markets as a source of liquidity in the crisis, and a general decline in confidence that financial markets can be expected to always operate smoothly – as required for reliance on liability management.

⁵ The “taxi rank” fallacy refers to the effect of a hypothetical regulation prohibiting a taxi from leaving a taxi rank unless there is another taxi also there – in order to ensure there is always a taxi available for arriving passengers. The effect, and analogy with minimum liquidity regulation, is obvious.

⁶ Similar liquidity creation occurred via securitisation activities involving creation of asset-backed commercial paper (ABCP) investment vehicles. Both repo and ABCP funding disruptions were important aspects of the GFC when concerns about the quality of the collateral led to investor unwillingness to roll-over funding and higher margin requirements.

Figure 1: Bank liquid reserves to bank assets ratio (%)^{a, b}

(a) Ratio of bank liquid reserves to bank assets is the ratio of domestic currency holdings and deposits with the monetary authorities to claims on other governments, nonfinancial public enterprises, the private sector, and other banking institutions.

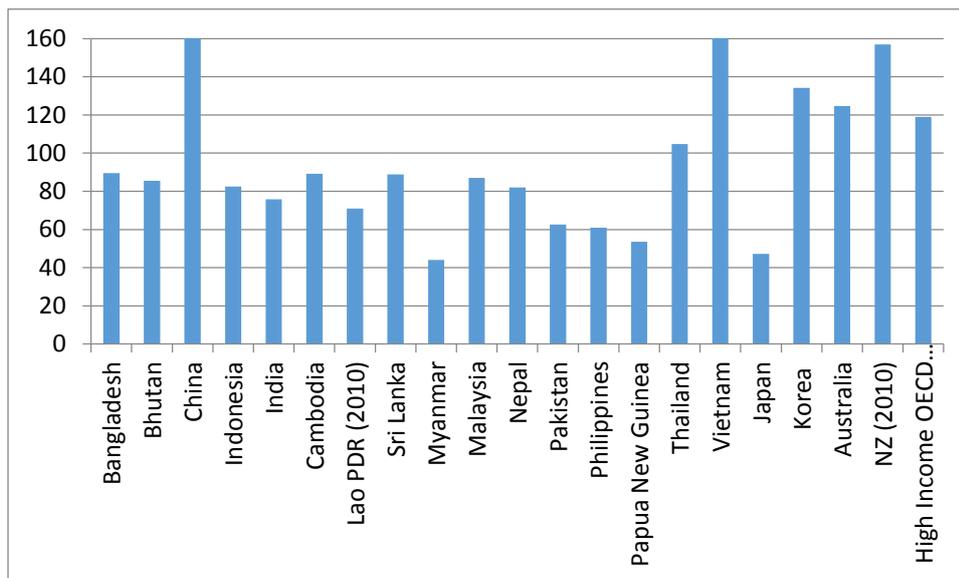
(b) Chart is truncated at 50, Myanmar and PNG figures for 2007 were 94.8 and 64.5 respectively.

Source: International Monetary Fund, International Financial Statistics and data files;

<http://data.worldbank.org/indicator/FD.RES.LIQU.AS.ZS>

Another potential indicator of differences in liquidity or funding risk is the banking sector's reliance on non-deposit funding (such as debt funding via capital markets) in providing credit to the private sector. Figure 2 illustrates differences in the ratio of private credit/deposits of selected banking sectors. With some notable exceptions (Japan) it is apparent that banks in "more sophisticated" financial sectors tend to rely more on non-deposit funding for provision of private sector credit than in emerging economies (although China and Vietnam appear to also be exceptions). This, it may be argued, exposes the "more sophisticated" banking sectors more to the vagaries of the capital markets, relative to those where deposit funding is more important.⁷

⁷ These outcomes reflect both funding choice decisions of banks as well as national savings-investment imbalances.

Figure 2: Bank Private Credit / Deposits (%)^(a)

(a) Chart truncated at 160%. Figures reported for Vietnam and China are 898 and 251 per cent respectively. Mohan and Kapur (2012, Table 6.1) present data on “loans to domestic deposits” which are generally consistent with the figures reported here, except they indicate figures for Vietnam and China of 0.98 and 0.69. They also include figures for HK (0.5) and Singapore (0.85), Taipei (0.77).

Source: World Bank Financial Development and Structure Dataset, November 2013

Liquidity risk can occur from mismatches in maturity between domestic currency asset and liability portfolios, maturity mismatches between foreign currency asset and liability portfolios, or from cross-currency mismatches between assets and liabilities. Mismatches of the latter two types mean that liquidity disturbances in foreign markets can spill over directly into domestic markets. For example, domestic banks may experience difficulties in rolling over foreign currency liabilities which they have previously issued in international markets to fund domestic lending. This was a feature of the 1997-8 Asian Financial Crisis which prompted many Asian economies to take significant measures (discussed below) to reduce such liquidity risks. Arguably, the global imbalances which contributed to the expansion of global liquidity prior to the GFC, and created the conditions for liquidity crises in international markets, will remain for the foreseeable future, making this as much of an issue for concern as domestic liquidity management.

While Central Banks, as the ultimate providers of domestic liquidity can take actions to counter a domestic liquidity shortage, their ability to provide foreign currency liquidity to domestic banks is limited to: their current holdings of foreign exchange; amounts they can access via multilateral agreements; or amounts obtainable from arrangements with the Central Bank issuing the currency in question. In the GFC, currency swaps between the US Federal Reserve and other Central Banks were one important mechanism by which shortages of US dollar liquidity in foreign markets were relieved.⁸

⁸ The currency swaps enabled, for example, Australia’s RBA to provide AUD to the US Fed in exchange for USD, which it could then lend, via a repo transaction, to Australian entities seeking USD in return for receiving collateral in the form of AUD securities. Because the US Fed did not sell the AUD into the market, the supply of USD liquidity to the market was increased by the repos undertaken by the RBA – and made available directly to market participants who may have had difficulties accessing it from alternative sources in the crisis situations

Freely floating exchange rates may absorb some of the disequilibrium involved in foreign currency liquidity crises, but even in more normal conditions there are consequences for the local economy and financial markets. A bank with foreign currency liabilities which it cannot rollover will need to purchase forex in the spot market – and to supply the required domestic currency will need to either sell domestic currency assets or raise additional domestic currency liabilities. (Even where banks have hedged the forex risk associated with such borrowings, the same overall effects occur via the actions of the counterparties to the FX hedging arrangements). These actions transfer liquidity pressures to domestic markets, increasing (in this case) domestic interest rates, reducing asset prices, and/or putting downward pressure on the exchange rate. In a crisis situation, where markets are not operating smoothly, this can amplify rather than moderate the disturbance.

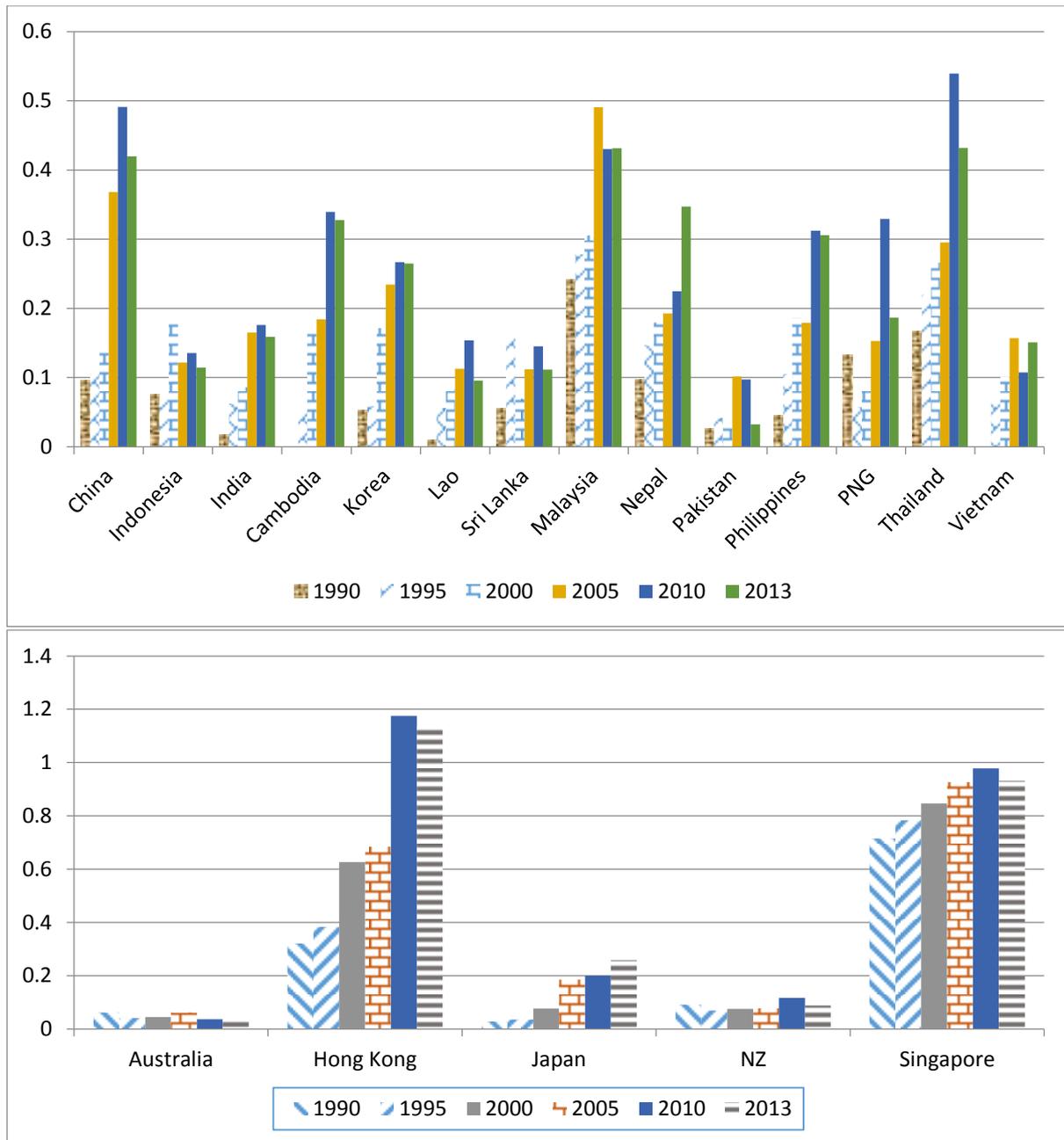
While Central Banks can relieve the domestic liquidity pressures (by domestic asset purchases) they face the “trilemma” problem of not being able to simultaneously conduct independent monetary policy, maintain a fixed exchange rate, and allow free international capital markets. Where banks have such balance sheet currency mismatches, the effect of exchange rate depreciation can lead to losses and solvency concerns, as well as difficulties for the broader business community – both in terms of international competitiveness as well as losses on foreign currency borrowings. Arguably, it is aggregate bank foreign currency mismatches and borrowings (even where hedged) which expose economies to the spillover of international liquidity crisis into domestic markets.

2. Pre GFC Asian Liquidity Regulation and Risk Management

The Asian crisis led to three main liquidity-related responses among Asian regulators. First, reflecting the significant role of capital flows and international liquidity in the crisis, Central Banks began accumulating foreign exchange reserves. Figure 3 illustrates. As well as requiring exchange rate intervention and management to achieve an undervalued exchange rate and current account surplus, build up of reserves provides the authorities with scope to moderate the effects of changes in international investor confidence. Capital outflows could be met by official sales of foreign exchange moderating downward pressures on the exchange rate. Of course, doing so reduces domestic currency liquidity, requiring sterilisation measures such as bond purchases from the private sector – bringing into sharp focus the importance of system liquidity management arrangements needed to facilitate this. Notably, use of foreign currency swaps by central banks prevents such a domestic liquidity effect, because USD is provided by the local central bank to local banks under repurchase agreements involving domestic currency securities. Kearns and Lowe (2008) discuss aspects of system liquidity arrangements.

prevailing. Fleming and Klagge (2010) provide an overview of the evolution and effects of such swap arrangements.

Figure 3: Foreign Exchange Reserves / GDP - Selected Asian Economies



Source: World Bank; World Development Indicators

Second, regional economies recognised the value of being able to access foreign exchange holdings of other economies through swap agreements to cope with country-specific foreign exchange crises. The Chiang-Mai Initiative was developed for this purpose and Sussangkarn (2011) provides an overview of its evolution. But, it has not been used to date. In the GFC, Central Bank currency swaps were negotiated between a number of central banks and the US Federal Reserve. Regional participants in these swap agreements were Australia, Japan, Korea, New Zealand, and Singapore. For most regional economies, the measures taken to build FX reserves (discussed above) and bank liquidity regulation (discussed below) were sufficient to obviate the need for access to USD funding markets.

The third consequence was that regional regulators ensured that their local banks were subject to enhanced liquidity regulation. While these regulations differed across countries,

reflecting local institutional characteristics, and have varied over time there were a number of common elements.⁹

- One is that most countries had a range of inter-related liquidity regulations, differing in format between countries – in contrast to the Basel 3 approach which involve only two “stress based” ratio requirements. This raises an obvious question of whether adequate liquidity regulation requirements can be compressed into two such requirements applicable across all countries of the globe. While the Basel approach allows for “alternative liquidity arrangements (ALA)”, these relate primarily to dealing with shortfalls of available HQLA, and not the use of simpler, diverse, approaches already in existence in Asian economies.
- Subhanij (2010, Table 6) illustrates the range and types of liquidity management regulations in place in 12 SEACEN countries as at 2010.¹⁰ All twelve had minimum liquidity ratio requirements and minimum requirements for reserve holdings (at the central bank), eleven had minimum liquid asset holdings, minimum cash flow gap, and maximum cash outflow requirements, nine required cash flow projections, and seven had limits on funding concentration and required stress testing. Minimum reserve requirements ranged from 5.5 per cent of deposits to substantially higher amounts.
- Incorporating information for other Asian countries¹¹, it is apparent that reserve requirements involving holdings of deposits at the Central Bank are commonplace except in economies with more sophisticated financial markets. (Only Australia, Japan, New Zealand, HK and Singapore did not impose such requirements).
- Similarly, most countries had restrictions on foreign exchange mismatches and minimum liquidity requirements. However, in Australia minimum liquidity requirements only applied to smaller banks, and Japan, HK and NZ did not have such requirements. In those, and other countries without minimum ratios, regulators either applied cash-outflow modelling requirements, mismatch – gap requirements and/or supervisory guidance on expected internal management approaches.
- On the surface at least, most regulators appear to be using a range of supervisory approaches consistent with the practices suggested by the Basel Committee (BCBS, 2013)

The Basel liquidity regulations involve an implicit presumption that the “one-size fits all” LCR and NSFR requirements are superior to these local, tailor-made, national approaches.

3. The Basel Liquidity Requirements

The historical development of the Basel Liquidity standards is shown in Table 1. While the importance of sound liquidity management practices was long recognised, there was little obvious attention paid to any need for liquidity regulation until the onset of the GFC. Then in December 2010, the Basel Committee released proposals for the introduction of two new types of minimum liquidity ratios.

⁹ Information has been drawn from a range of sources including SEACEN (2011), FPRI, Thailand (2010), FRBSF (2011), World Bank Regulation and Supervision database (2012).

¹⁰ Countries included are: Cambodia, Korea, Malaysia, Myanmar, Nepal, Philippines, Sri Lanka, Taiwan, Thailand, Indonesia, Brunei, Vietnam.

¹¹ Australia, Bangladesh, Bhutan, China, HK, India, Japan, NZ, Pakistan, Singapore.

Table 1: The Development of International Liquidity Standards

Date	Title	Description
September 1992	BCBS10: A Framework For Measuring And Managing Liquidity	Principles and Practices
February 2000	BCBS69: Sound Practices For Managing Liquidity in Banking Organisations	Revised version of BCBS10
February 2008	BCBS136: Liquidity Risk: Management and Supervisory Challenges	Stocktake of supervisory liquidity management practices
September 2008	BCBS144: Principles for Sound Liquidity Risk Management and Supervision	Expansion of BCBS69
December 2010	BCBS188: Basel III: International framework for liquidity risk measurement, standards and monitoring	Announcement of LCR and NSFR requirement proposals
January 2013	BCBS238: Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools	Finalisation of LCR details and phased introduction schedule
April 2013	BCBS248: Monitoring tools for intraday liquidity management	
January 2014	BCBS271, Basel III: The Net Stable Funding Ratio	Revised version of the Net Stable Funding Ratio requirements
April 2014	BCBS284 Frequently Asked Questions on Basel III's January 2013 Liquidity Coverage Ratio framework	Technical aspects relating to implications of specialised transactions for the LCR

These major initiatives are:

- the development of the Liquidity Coverage Ratio (LCR) requirement which has been agreed and implemented in a number of countries; and
- the development of the Net Stable Funding (NSF) Ratio requirement, which has since been revised with new proposals issued in January 2014 for commencement in 2018.

Both of these requirements are aimed at internationally active banks operating under the IRB approach, raising the question of whether they are necessary or appropriate for smaller domestic banks in emerging economies. The fact that most Asian emerging economies escaped the liquidity problems of the GFC, together with the pre-existence of liquidity regulation, increases the relevance of this question. And whether introduction of such liquidity regulation is likely to have significant adverse effects on domestic economies is another issue taken up later.

The LCR requires banks to hold eligible high quality liquid assets (HQLA) sufficient to meet projected net cash outflows under a 30 day stress scenario – in which different run-off rates are assumed for different types of liabilities (and drawdown/repayment rates for various loan commitments). High quality liquid assets are allocated into A, B1 and B2 categories with limits on the eligible amounts from lower quality categories. A category assets include domestic government (and some multinational and foreign government) debt. B1 includes lower rated debt of other governments, high quality corporate debt and covered bonds. B2 includes RMBS, lower rated corporate debt and some listed equities with the value subject to haircuts of differing severity. The minimum requirement of HQLA/(projected net outflows) greater than 100 per cent is to apply from January 2019, and to be phased in with annual increases from January 2015 when the required minimum will be set at 60 per cent. In a stressed situation, the LCR is permitted to drop below 100 per cent. In addition, the Basel Committee (BCBS238, para 176) identifies a number of monitoring tools for supervisors to use in identifying potential liquidity issues. These are: Contractual maturity mismatch; Concentration of funding; Available unencumbered assets; LCR by significant currency; and Market-related monitoring tools.

The NSF ratio requirement is focused on the funding mismatches of banks, and to be implemented by essentially comparing the amount of funding that banks have with a maturity in excess of one year, relative to the amount required for financing assets which will not involve repayments within one year. It is expressed as $NSF = ASF/RSF = (\text{Available amount of stable funding}/\text{required amount of stable funding})$ and is required (when fully implemented) to be in excess of 100%. Liabilities are assigned weights reflecting likely “stickiness” over a one year horizon in calculating ASF, while assets are also assigned weights reflecting need for ongoing financing in calculating the RSF. These weights incorporate an allowance for the need for continued new lending such that, for example, retail loans with a residual maturity of less than one year are given a 50 per cent weight rather than zero.

A particularly noticeable feature of the Basel documents outlining the LCR and NSF is the absence of any discussion about alternative approaches acceptable for less complex domestic banks, although earlier Basel documents on liquidity principles and practices note the use and suitability of such liquidity requirements as minimum liquidity holdings. While requirements for Alternative Liquidity Arrangements (ALA’s) are outlined in the Basel documents, these relate solely to the situation where there are insufficient domestic currency HQLA available to meet LCR requirements. ALA’s thus include introduction of a Central Bank CLF, use of foreign currency HQLA, or greater use (with haircuts) of lower category HQLA.

Notably, in Australia, APRA has exempted smaller ADIs from the LCR requirement, continuing with the previous MLH (minimum liquidity holdings) requirement that HQLA/Liabilities exceed nine per cent. While this appears at variance with the Basel LCR documents, the fact that the LCR proposal is aimed at internationally active banks suggests that application to smaller domestic banks may not be required for compliance with the standard. Thus, for many regional economies, continuation of existing regulations for large parts of their banking sectors may be feasible (and possibly desirable).

What is also noticeable is the lack of substantive discussion of the implications for the amount of liquid asset holdings relative to total assets under the LCR relative to other simpler approaches (such as a minimum liquidity holding ratio). While the holdings required under the LCR obviously depend upon run-off assumptions and balance sheet structures, it is interesting to ask whether simpler approaches common in emerging market economies are likely to imply more or less liquid asset holdings than the LCR. Approximate estimates for Australia suggest that, in that case, at least, the LCR approach generates similar HQLA/Assets ratios as does the MLH approach applied to smaller institutions.¹² This raises the question of whether greater protection against liquidity risk is achieved by the LCR? While the average liquid asset holdings appear similar, the bank-specific calculation of requirements means that there is likely to be a better link between individual portfolio liquidity risk and required holdings – if the assumed “run-off rates” and resulting weights are appropriate. Whether the implementation costs, and use of weights based on average experience of Western economy banks in the GFC, make this worthwhile for smaller institutions in emerging economies is questionable. Similar issues arise in considering the NSFR requirement proposal.

4. Asian Basel 3 Liquidity Regulation Adoption

As would be expected, Asian members of the Basel Committee have generally adhered to the proposed timetable for implementation of the LCR – and in some cases proceeded in advance of it. But other Asian economies have been slower to incorporate the Basel proposal into domestic liquidity requirements, with most only at the stage of preparing and/or releasing draft standards by late 2014. Table 3 illustrates.

Table 2: Basel LCR Introduction in Asia

Country	Status		Country comments
<i>Basel Committee Members</i>		Introduction date	
China	Implementation planned at 60 % rate	Jan-14	Full Introduction by Jan - 19
HK	Implementation planned at 60 % rate	Jan-15	Full Introduction by Jan - 19
Australia	Implementation planned at 100 % rate	Jan-15	Full Introduction by Jan -15
Singapore	Implementation planned at 60 % rate	Jan-15	Full Introduction by Jan - 19
India	Implementation planned at 60 % rate	Jan-15	Full Introduction by Jan - 19
Korea	Implementation planned at 100 % rate	Jan-15	Full Introduction by Jan - 19
Japan		Mar-15	For internationally active banks
Indonesia			
<i>Non-Basel Committee Members</i>		draft regulation publication (expected)	
Bangladesh	Draft regulation not published	2014	

¹² APRA (2014) notes that of the 14 institutions which applied for the CLF for 2015 (and which can be assumed to encompass most of the banking sector assets), the stressed 30 day outflow figure was \$410 billion. Total assets of all banks at September 2014 were approximately \$3 trillion, suggesting a HQLA/assets ratio in the order of 10-13 per cent. The MLH ratio for smaller institutions is generally set at around 9 per cent or greater. For Europe, the EBA (2013, p25) calculates net cash outflows of EUR 3.251 trillion for a sample of banks with total balance sheet assets of EUR 33 trillion.

Bhutan	Draft regulation not published	2014	
Chinese Taipei	Draft regulation not published	2014	Draft Regulation has been circulated to banks for comments. First QIS is done.
Macao SAR, China	Draft regulation not published	2015	
Malaysia	Draft regulation not published	2015	Observation period ongoing since 2012. Aims to issue final standard in 2014, and come into force beginning January 2015.
Nepal	Draft regulation published	2012	
New Zealand	Final rule in force	2010	We have not implemented the LCR requirement, but implemented an alternative, broadly equivalent, liquidity standard prior to Basel III.
Pakistan	Draft regulation not published	2015	
PNG	Draft regulation not published	2016	The draft standards aim to meet the principles underpinning Basel II and III, while adopting requirements to ensure sustainable application in Papua New Guinea.
Philippines	Draft regulation not published	2014	
Sri Lanka	Draft regulation not published	2014	
Thailand	Draft regulation not published	2014	During the observation period, the BOT has conducted the Quantitative Impact Studies (QIS), and analysed data to assess the impact as well as to ensure that the standard appropriately reflects the Thai context in terms of both the financial system and consumers' behaviour.
Vietnam	Draft regulation published	2014	

Sources: (Non-Basel Committee members) Financial Stability Institute, *FSI Survey Basel II, 2.5 and III Implementation*, July 2014. <http://www.bis.org/fsi/fsiop2014.pdf>; (Basel Committee Members) Moody's Investor Services (2014) *Basel III Implementation in Full Swing: Global Overview and Credit Implications*, August 4, 2014 and Central Bank/Regulator web sites.

5. Application and Possible Consequences of the Basel Approach to Liquidity Regulation in Asia

The applicability and relevance of the LCR and NSFR requirements in Asia has generated significant discussion and concerns – as reflected in the comment below from the FSB review of Basel 3 implementation issues thought important by emerging economies.

“On the liquidity side – limited availability of high quality liquid assets (HQLA) in certain markets and for certain types of market participants, which may lead to the hoarding of assets with adverse effects on domestic market liquidity and capital market development; differences in the recognition of HQLA across jurisdictions, which may penalise the treatment of certain local assets of bank subsidiaries operating in host EMDEs when calculating LCR on a consolidated basis; the potential impact of liquidity requirements, combined with structural funding characteristics, on the availability and pricing of banks' long-term lending activities (e.g. infrastructure financing); and the intensified competition for deposits that may be prompted by the calibration of outflow

rates for different types of liabilities and off-balance sheet commitments.” (FSB, 2014, p4)

These concerns can be considered under three headings: asset (investment) portfolio effects; funding composition effects; cross-border considerations.

Asset (investment) portfolio effects

One concern has been whether imposition of higher liquidity requirements (via the LCR) will lead to adjustments via restriction of private sector credit (to acquire HQLA) or reduction in the size of bank balance sheets. As illustrated by the earlier discussion of pre-existing liquidity requirements in Asian economies, there appears to be little likelihood that the Basel requirements imply that a larger stock of HQLA would need to be held than under current regulations. Even if that were the case, the only study available which examines an increase in liquidity requirements is for the UK (Banerjee and Mio, 2014) and finds that the adjustment was primarily via a switch in the composition of liquid assets (away from claims on other banks) and more reliance on more stable non-financial sector deposits.

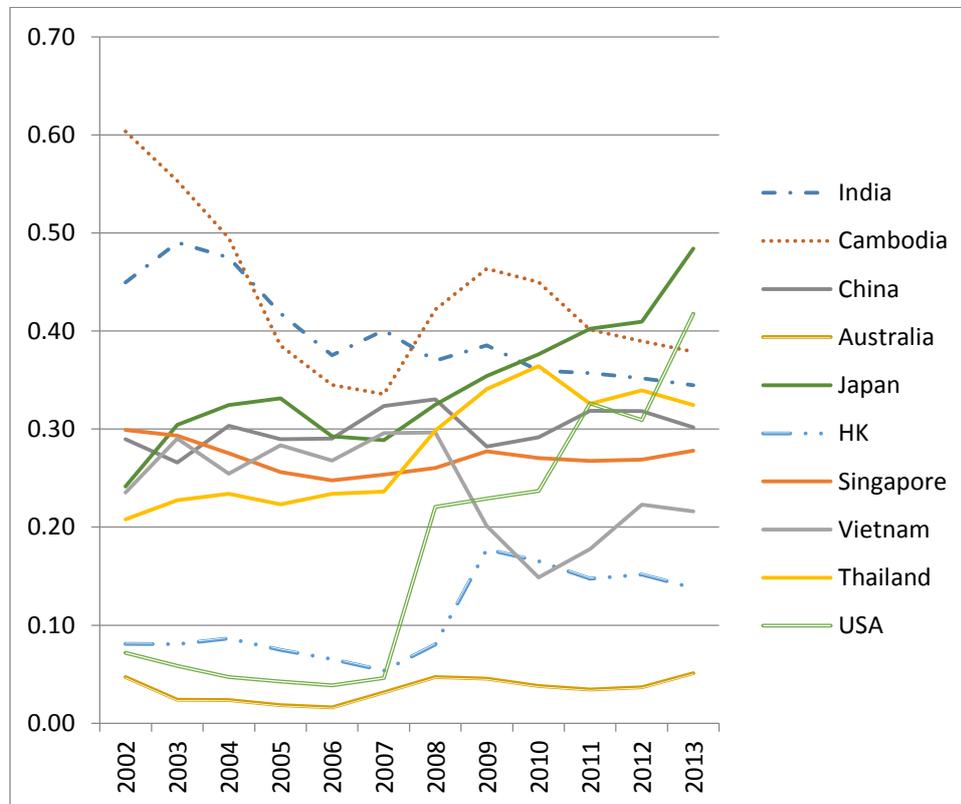
That study does, however, illustrate potential structural consequences. One is from the change in the definition of acceptable HQLA towards primarily sovereign debt and possibly marketable private sector debt. For many economies, including Australia, the stock of sovereign debt may be inadequate to meet bank LCR needs, while markets in private sector debt (including RMBS) may be deemed too vulnerable to disruption to warrant inclusion of such securities as HQLA. This seems likely to be less of an issue in emerging economies where current liquidity regulations often imply significant holdings of reserves at the Central Bank which qualify as HQLA. Moreover, with less well developed interbank markets and arguably less finely tuned system liquidity arrangements, banks need to hold greater balances at the Central Bank. Figure 4 illustrates the size of claims of banks on government and Central Banks. However, as financial systems develop, and system liquidity arrangements develop (including Real Time Gross Settlement) the potential need and demand for Central Bank reserves falls, as reflected in the low figures for Australia in Figure 4. This is not, however, a current issue for most regional economies.

Local regulators can deem which assets are eligible for inclusion as HQLA. “In its updated proposal released in May 2013, the Australian Prudential Regulation Authority stated it would not consider including level 2B assets, while the Hong Kong Monetary Authority proposed only to recognise single-A rated corporate debt securities and RMBS rated AA or above in its July consultation. Earlier in October, the China Banking Regulatory Commission permitted BBB- corporate debt in its new LCR proposal, but continued to exclude RMBS and equities. In August the Monetary Authority of Singapore also excluded RMBS and equities from its eligible LCR assets and only permitted corporate debt rated single-A and above.” (Risk)

Where there is an inadequate supply of HQLA due to persistent government budget surpluses, the option to use a “Committed Liquidity Facility” (CLF) alternative involving fee based provision for access to Central Bank liquidity funding exists. Australia was one of the countries which pushed for this option, and has implemented it. One consequence of this approach is that a range of acceptable assets have to be designated as eligible collateral for

accessing the facility, and such designation endows those assets with a liquidity value. This may induce the development of use and markets for such assets.

Figure 4: Public Sector Asset holdings of Banks^a



(a) Calculated as $(\text{Claims on Central Bank and Government, Currency and Reserve Deposits and Securities}) / (\text{Deposits included in Broad Money})$ for Depository Corporations other than Central Bank

Source: IMF IFS Database

Another possible consequence arises from the incentives created for financial engineering solutions to emerge which enable banks to acquire “ownership” of HQLA without impeding their ability to provide credit. For example, pension funds or life offices could enter a securities lending transaction with a bank in which the bank borrows HQLA (with ownership transferred for the length of the loan) in return for provision of private sector securities as collateral. Whether the highly complex Basel LCR provisions prevent this is unclear

The proposed NSFR requirement also raises concerns about reduced incentives for banks to engage in long term funding.

Funding Effects

A second structural effect is the potentially greater attractiveness of more stable deposit funds, since the HQLA holdings required will be less than when less stable funding is used. This can be expected (and some evidence is available for Australia) to cause an increase in interest rates paid on retail deposits relative to deposits or loans from other financial institutions. Likewise, increased attractiveness of new styles of deposit funding, such as 31

day notice of withdrawal accounts, which meet the stable funding definition on an ongoing basis until notice is given, can be expected.

Assumptions regarding stressed cash outflows are modelled on Northern Hemisphere experience during the financial crisis, raising the question of the relevance of these assumptions to the Asian situation. The run-off rates for such things as trade receivables are the subject of one change to the standards since the initial draft.

Cross-Border Issues

The interdependence of domestic and foreign currency HQLA may be particularly relevant for economies where banks have significant foreign currency balance sheet components and where foreign banks operate subsidiaries in the domestic economies. Table 3 provides data on foreign bank share of banking system assets for a number of Asian countries.

Internationally active banks are able to consolidate HQLA holdings across currencies, raising the question of whether domestic currency HQLA could, in a foreign crisis be converted into foreign currency HQLA creating liquidity problems in the domestic currency. Domestic regulators need to ensure that, while it is generally beneficial for internationally active banks to be able to redistribute liquidity as needed within the group, such activities do not lead to spillovers of liquidity crises. Enforcing minimum requirements in domestic currency terms appears necessary – but to do this, it may be necessary to force such banks to operate via subsidiary rather than branch structures.

Table 3: Foreign Bank Asset Share - Selected Countries

Country	Foreign ownership: share of banking system assets
India	7 (5: 2009)
China	2 (1: 2009)
Pakistan	43 (53: 2009)
Philippines	19
Cambodia	42 (54: 2009)
Indonesia	37 (32: 2009)
Thailand	24 (6: 2009)
Australia (2009)	2
Bangladesh (2009)	3
Hong Kong (2009)	92
Korea, Rep. (2009)	19
Malaysia (2009)	18
Nepal (2009)	13
New Zealand (2009)	79
Singapore (2009)	2
Vietnam (2009)	2

Sources: <http://www.bis.org/publ/cgfs51.pdf>

World Bank Global Financial Development Database (source of 2009 figures)

6. Conclusion

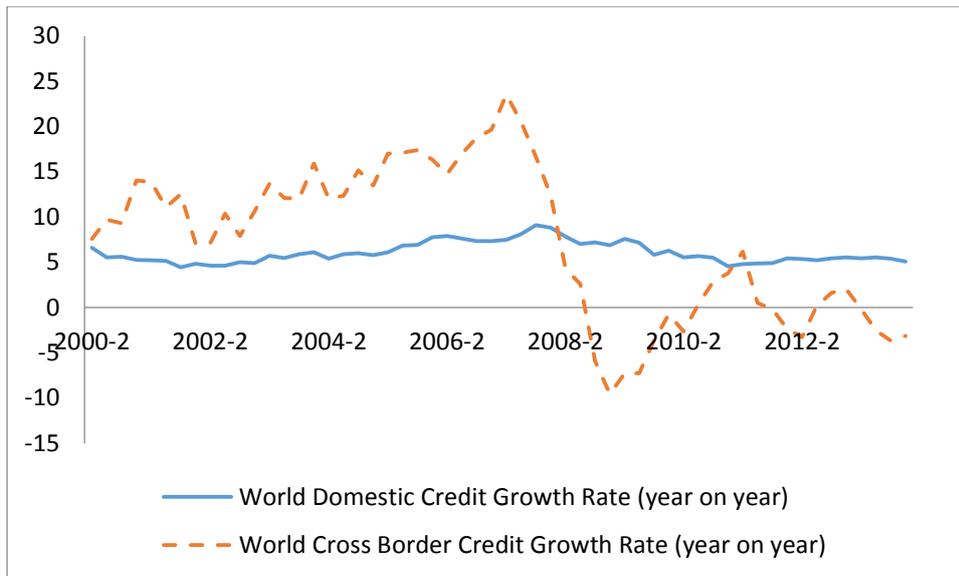
Both experience and theory provide a basis for liquidity regulation, and an increased focus on liquid asset holdings to manage risks arising from portfolio mismatches rather than use of liability management. This is reflected in the Basel 3 liquidity standards involving the introduction of the LCR and (less immediately) the NSFR requirements.

Asian financial regulators, influenced by the Asian Financial Crisis of 1996-7, reached this conclusion well before Western financial regulators who had eschewed such requirements after the widespread bank deregulation of the 1980s and 1990s.

However, as with the case of Basel capital regulation, focus on aligning risk-based regulation with the internal practices of international banks has led to very complex regulatory requirements. That complexity, reflecting the activities of internationally active banks in Western economies, draws on the experiences of such banks in the GFC to develop relevant parameters. The applicability of such parameterisation to Asian economies and banks is open to question, while the merits of such complexity relative to pre-existing local regulations for managing individual bank and system wide liquidity risks has yet to be proven. Since liquidity risks are significantly dependent upon the nature of institutional arrangements of the Central Bank, it seems unlikely that a “one-size-fits-all” approach as per the Basel standards is appropriate.

While Central Banks can (or should be able to) resolve systemic domestic liquidity problems and provide needed liquidity to individual (solvent) banks, the more substantive issue relates to the long term increasing interdependency between financial systems. (Note, a retarding of this trend since the GFC, as shown in the decline in cross border credit in Figure 5). Such interdependency, when involving foreign currency portfolio mismatches (both funding and exchange rate risk) increase the risk for economies of shifts in global investor sentiment towards domestic banks and potential complications for domestic liquidity. This highlights the importance of setting of domestic capital and liquidity standards sufficiently strong to instill and sustain confidence. Doing so may enable less reliance of building up and maintaining central bank stocks of foreign exchange as the mechanism for protecting against foreign liquidity crises.

Figure 5: World Credit Growth



Source: BIS gli.xlsx

While there are, no doubt, distortions associated with the types of liquidity regulation found in Asian economies, it is an unproven act of faith that the more complex Basel approach is better. Liquidity regulation needs to take into account domestic institutional arrangements and market characteristics. The Basel requirements do not do this. Particularly for emerging economies, it would seem appropriate to eschew the approach for smaller, domestically oriented, banks (as APRA has done) and retain or adapt the simpler currently existing approaches.

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