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Basel III Liquidity Options

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In this ACFS Discussion Paper, Professor Kevin Davis examines the new Basel Liquidity Requirements announced at the end of 2010, focusing primarily on the liquidity coverage ratio (LCR) requirement. The underlying philosophy of the approach can be questioned, partly because it aims to deal with both systemic stress and individual bank stress using the one policy instrument. The "Australian solution" to the shortage of high quality liquid assets (HQLA), involving a fee based liquidity facility at the Reserve Bank, also raises a number of tricky questions about determination of an appropriate fee and may require a review of system wide liquidity management arrangements. While some details remain to be determined, and the implementation date is relatively long distant, the impact on Australian banks and the financial market is likely to be substantial.

It is generally accepted that the forthcoming introduction of liquidity requirements as part of Basel III[1] poses significant issues for Australian banks. In particular, there is a shortage of government debt available to be held to enable compliance with the Liquidity Coverage Ratio (LCR) requirement. The proposed "Australian solution" to this problem changes the approach to ensuring liquidity crises are avoided in a subtle, but significant, way, and may have broader implications for system-wide cash management arrangements. The Net Stable Funding Ratio (NSFR) requirement also has the potential to affect the structural development of Australian financial markets, given the current high reliance on overseas wholesale debt markets.

The Basel III LCR and NSFR requirements have been introduced as one response to the Global Financial Crisis experience in which banks, worldwide, experienced liquidity crises. Holdings of marketable private sector securities turned out to be not very marketable, and lines of credit and short term funding dried up. A vicious cycle of asset sales to meet funding shortages led to asset price declines, inducing collateral and margin calls and further funding problems.

That experience demonstrates the third of the problems associated with liquidity. The first problem is that liquidity is hard to define, although most analysts would point to a liquid asset as being one which can be converted into cash (the ultimate liquid asset) quickly and without risk of significant loss of market value. Second, it is even harder to measure. And third, it is likely to disappear just when it is needed most. It is not an inherent, immutable property of a financial asset, but one subject to the *fallacy of composition*. An asset may be liquid for any individual holder, but not if all holders are attempting to use that property simultaneously.

[1] Basel Committee on Banking Supervision *Basel III: International framework for liquidity risk measurement, standards and monitoring*, December 2010, http://www.bis.org/publ/bcbs188.pdf

The Basel Committee[2] has defined bank liquidity as follows. "Liquidity is the ability of a bank to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses." Such liquidity risk arises from the key role of banks as *liquidity providers* by funding longer term assets with shorter term (often at call) liabilities.

Their approach has been to announce the gradual introduction of two minimum requirements, one aimed at short-term crisis situations and the other focused on longer term funding.[3] Although not strongly emphasized, the former focuses primarily on system wide liquidity crises (reflected in the use of a stressed scenario involving "a combined idiosyncratic and market-wide shock" (bcbs188, para 17) and the latter on individual bank difficulties involving "an extended firm-specific stress scenario" (bcbs188, para 125).

The LCR Requirement

The LCR requires banks to hold an amount of high quality liquid assets (HQLA) sufficient to enable the bank to cope with fund outflows over a one month stress period. The scenario envisaged for cash outflows draws on the experience of the Global Financial Crisis, and assigns varying "run-off" factors to different classes of funding, allows for limited inflows of funds (such as from contractual repayments on loans), and assumes limited outflows of funds associated with the need to maintain some level of lending and credit extensions. Given the complexity of bank operations, including collateralized funding, off-balance sheet activities and derivatives transactions, there is a long list of categories of transactions for which quantitative assumptions about run-off factors to derive the denominator of the LCR must be made.

$$LCR\ Requirement: \frac{HQLA}{Net\ cash\ outflow\ over\ 30\ days} > 100\%$$

Because avoiding asset price fire-sale declines is critical, only assets whose price is not sensitive to credit risk concerns are suitable for inclusion in HQLA (the numerator of LCR). The Basel Committee adopts a two tier approach to the LCR with level one assets (essentially sovereign debt and Central Bank liabilities) being required to account for at least 60 per cent of HQLA. Level 2 assets can include highly rated (AA- or better) corporate (non financial institution) and covered bonds and some other assets (with a 15 per cent haircut to market value applied).

The Basel Committee also suggests that HQLA should be eligible for use as collateral in accessing Central Bank liquidity facilities. Because of the system-wide stress scenario used, securities issued by other banks or financial institutions are not included in HQLA because these would be likely to be facing losses in market value.

[2] Basel Committee on Banking Supervision, *Principles for Sound Liquidity Risk Management and Supervision,* September 2008, http://www.bis.org/publ/bcbs144.htm

[3] After an observation period commencing in 2011, the LCR would apply from 1 January 2015 and the NSF from 1 January 2018.

Ultimately, these criteria for eligibility mean that Australian government and semi-government debt have been designated by the Australian authorities as the only currently available assets meeting the LCR.[4] While the Reserve Bank accepts residential mortgage backed securities as collateral for repurchase agreements, these are issued by other financial institutions. Similarly, despite a large Kangaroo Bond market (AUD securities issued in Australia by foreign entities), the depth of the secondary market in these securities, and demonstrated resilience, is deemed inadequate. While the Federal Government has recently announced plans to allow limited issuance of covered bonds, it will (hopefully) be some time before there is any evidence of how prices of such securities will cope in a time of stress (and their consequent suitability as level 2 HQLA).

The Australian dilemma is that, even with a shift of the government budget into deficit for some foreseeable future, past years of surpluses mean that there is unlikely to be sufficient Federal or State government debt to meet bank LCR demands. While, in aggregate, there may be enough debt on issue, the demands of other fixed interest investors (both domestic and foreign) mean that there will be strong competition – pushing government yields down. Good for the government, but not for the holders!

The response has been to obtain Basel approval for the "Australian solution" (also relevant for a few other countries in good fiscal shape). This involves banks being able to meet their LCR "gap" by inclusion of liquidity facilities which they obtain, for a "fair" fee from the RBA.

An Assessment of the LCR Requirement

The approach adopted places the onus for liquidity insurance upon the banking sector and private financial markets. The LCR approach does not envisage the banking system relying (at least initially) upon the safety valve of RBA liquidity provision via repurchase agreements etc. The logic of the approach can be questioned, in so far as it applies to system wide crisis scenarios rather than individual bank difficulties.

Consider a situation in which a liquidity crisis occurs and banks respond by selling their holdings of government securities. Such widespread action will push the prices of those securities down and their yields up, which is unlikely to be a desirable outcome in such a situation from the perspective of the RBA. Consequently, there is likely to be RBA operations in the cash market to inject liquidity by purchasing government debt or by repurchase agreements based on those or other eligible securities.

Consequently, the merits of an approach which assumes that the market can ensure enough liquidity in a crisis situation seems contradictory to the likely outcome, when the only ultimate provider of liquidity – the Central Bank – is likely to have to act. To the extent that this is the case, the exclusion of other repo-eligible securities from the LCR calculation can be questioned.

[4]APRA "APRA clarifies implementation of global liquidity standards in Australia" Media Release 11-03, 28 February 2011. http://www.apra.gov.au/media-releases/11_03.cfm

To the extent that the LCR is aimed at ensuring individual bank liquidity adequacy in a time of individual stress, there are also some questions which should be posed. First, are requirements based on a system-wide stress scenario appropriate? Second, the exclusion of a range of private sector assets from the calculation seems less warranted since their values would be little impacted by sales by one bank only.

The dilemma here is that the LCR appears to be one instrument aimed at achieving two objectives – one being individual bank liquidity adequacy in a single-name stress situation and the other being system wide liquidity adequacy in a generalized crisis scenario. A long standing tenet of policy formulation is that at least as many instruments are required as there are objectives if those objectives are to be fully met, rather than being constrained by a trade-off.

A number of other important issues arise from the planned implementation of the LCR.

Deposit Insurance Coverage:
The stress scenario gives a very low "run-off" rate to insured deposits. The more is insured deposit funding, the lower will be the hypothetical scenario cash outflow and thus the lower required HQLA holdings. The higher is the "cap" decided upon for the Financial Claims Scheme (currently $1 million and to be re-set by October 2011) the higher will be the proportion of deposits which fall into this category.

The Australian solution:
There is a fundamental difference in the underlying philosophy implied by the solution to a shortage of HQLA of allowing banks to fill a LCR gap through contracted liquidity facilities at the RBA. Specifically, it allows for liquidity requirements to be met partially by having in place arrangements for tapping this RBA liquidity safety valve – rather than requiring liquidity protection to be purely by way of bank sales of liquid assets into the private markets.

The ultimate, aggregate, outcome may not be too different. If instead, in the absence of that facility, all banks are unloading government securities in a crisis and pushing prices down and yields up, the RBA may be compelled to step into the market as a buyer to meet its interest rate targets.[5] Aggregate liquidity would be increased, as would have been the case where the liquidity facility approach applied. While the adjustment process may be different, it is not apparent that the outcome would be different to a situation where repo-eligible securities are allowed to be counted to meet the LCR.

Where an individual bank faces a "name" crisis, it may be able to sell non HQLA assets without creating "fire sale" conditions. Consequently, the need for that bank to tap the liquidity facility is likely to be reduced, and the likelihood of RBA liquidity injection is reduced. But nevertheless, there is a fundamental change away from requiring basic liquidity protection solely by private provision.

This raises two possible alternatives. One is that other private sector securities which are "repo-eligible" at the RBA could be included in LCR eligible assets. The Basel Committee provides for

[5] Even if the crisis is a "flight to quality" with non-banks increasing their demand for government debt in exchange for bank deposits, the consequent liquidity adjustments of banks may create a need for RBA injection of liquidity.

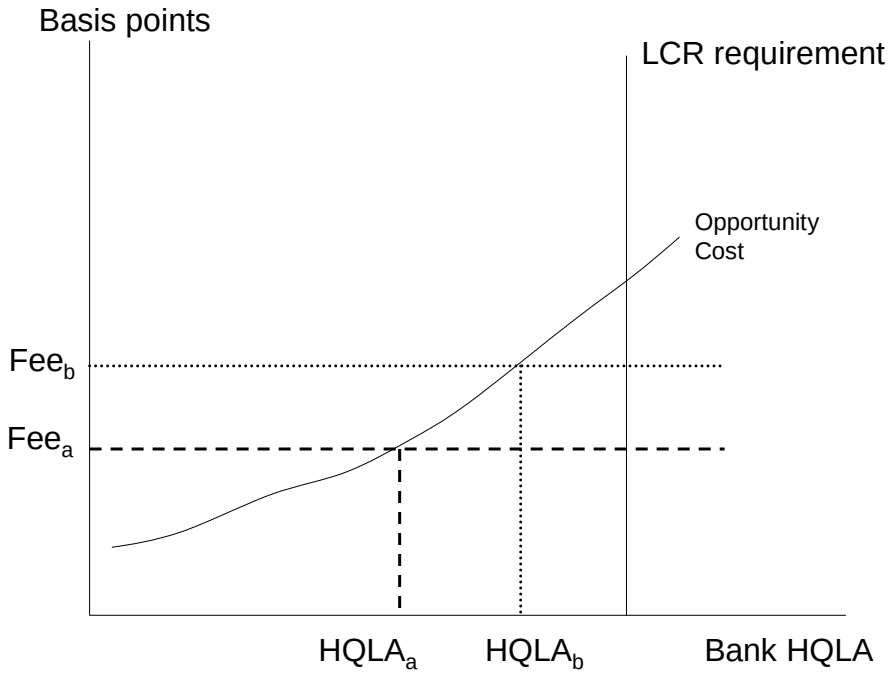
the option for "level 2" assets to be included with a minimum 15 per cent haircut, and that haircut could be increased if it was thought appropriate to allow some available assets (mortgage backed securities, Kangaroo bonds) to count as level 2 assets.

Another option is that banks could build up their holdings of Exchange Settlement Accounts at the RBA – because these also count towards the LCR. Currently the RBA pays interest on these at 25 basis points below the target cash rate, and the banks minimize ESA balances accordingly. This raises the question of the pricing of the proposed liquidity facility.

Pricing of the RBA liquidity facility

The Australian solution requires that a fee be set for the liquidity facility which is "fair" – in the sense that there is no benefit/cost from using the facility (and holding eligible non-HQLA assets as potential collateral) relative to holding additional HQLA to meet the LCR requirement. There are two fundamental problems here. One is that the counterfactual involves setting a fee which is related to the credit-risk adjusted yield of additional holdings of level 1 and 2 HQLA, when there are none of the latter for which a yield is available.

The second problem is that a fundamental simultaneity problem exists, as follows. The reason for the safety valve facility is that the cost to banks of acquiring HQLA beyond some level is seen as prohibitive, given the stock available. As banks attempt to increase their holdings of government debt, their demand will drive down its yield relative to other investments. Wherever the liquidity facility fee is set will affect the relative use of the liquidity requirement versus holding HQLA, with the latter in turn affecting the cost to banks of using HQLA. The Figure below illustrates. The opportunity cost to banks of holding more government debt (the additional risk adjusted yield foregone on alternative private debt) is shown as increasing in their holdings of HQLA (because the higher bank demand for government debt drives down its relative yield). If the liquidity facility fee is set at Fee_a, HQLA holdings will be at $HQLA_a$, if it is set at Fee_b the holdings will be at $HQLA_b$ etc. Thus there is no unique fee level.



Exchange Settlement Account Arrangements and the Liquidity Facility Fee

A further complicating feature arises from the ability of banks to use Exchange Settlement Account (ESA) balances to meet the LCR requirement. Currently the RBA pays 25 basis points below the cash rate, and banks manage their liquidity to keep minimal ESA holdings (lending surplus funds to other banks overnight at the cash rate). Conceivably, and ignoring the simultaneity discussed above, it may not be possible for the RBA to always charge a sufficiently low fee for its liquidity facility so as to make that more attractive than building up ESA balances.

Consider, for example, the situation where a bank holds repo-eligible RMBS to support the liquidity facility. Because there is a haircut given to level 2 assets of at least 15 per cent, $100 of HQLA would require (say) $120 of holdings of level 2 assets. The fee for the liquidity facility should thus be for a facility of $120 and would reduce the net return on the $120 of repo-eligible assets backing that to of a government bond rate equivalent. The consideration for the bank is whether it would prefer to hold $120 of assets earning (net of the liquidity facility fee) the government bond rate compared to the alternative of $100 in its ESA account earning the cash rate less 25 basis points and another $20 in higher yielding private sector assets. The slope of the yield curve (long term v short term rates) and size of credit spreads (for private sector securities over government rates) are relevant factors in this calculation.

While these arrangements remain to be determined, if there is a build up of bank ESA balances (rather than holding other assets), the RBA's cash rate target would see it acquiring additional

assets from the banks (such as government securities) and potentially aggravating the shortage of HQLA.

The implication is that the whole structure of arrangements for system liquidity management may need to be reexamined.

This FRDP was prepared by Kevin Davis, Research Director, Australian Centre for Financial Studies and Professor of Finance, University of Melbourne.

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