

## B LIQUIDITY REGULATION AS A PRUDENTIAL TOOL: A RESEARCH PERSPECTIVE

*In response to the flaws in banks' liquidity risk management revealed by the global financial crisis, the Basel Committee on Banking Supervision has proposed a new set of liquidity requirements to complement its revised capital requirements framework. This special feature reviews, from a research perspective, the role of liquidity requirements in mitigating not only liquidity risks, but also solvency risks in banking. It highlights how liquidity requirements differ from capital requirements and discusses how selected features of the Basel III liquidity rules can help to reap the benefits of liquidity outlined by research theories.*

### INTRODUCTION

The recent financial crisis provided a vivid illustration of how the materialisation of liquidity risk<sup>1</sup> in some parts of the financial system can lead to the drying-up of liquidity in entire market segments, such as unsecured interbank markets, causing a system-wide scramble for liquidity. Central banks had to step in and provide vital liquidity lines in order to prevent liquidity shortages from turning into solvency problems for financial institutions.

In response to the recent global financial crisis, the Basel Committee on Banking Supervision proposed, in December 2010, a new set of liquidity requirements to complement its revised capital requirements framework.<sup>2</sup>

This new set of liquidity standards is designed to mitigate adverse systemic effects and is expected to yield substantial macro-prudential benefits. Indeed, the new requirements are expected to lead to an increase in credit institutions' liquidity buffers and to reduce the risks posed by maturity transformation and interconnectedness in the financial system. Importantly, they should also reduce information asymmetries concerning banks' risks, including banks' liquidity risk exposure and liquidity risk-bearing capacity, which should improve the efficiency of interbank markets.

In the medium term, the aim of the liquidity requirements is to encourage all banks to have business models that allow them to limit their liquidity risk and fulfil liquidity standards without a disproportionate and unduly long-term dependence on central bank funding.<sup>3</sup>

This special feature argues that the role of liquidity requirements can be viewed not just as an insurance policy for dealing with liquidity risk, but also as a prudential regulatory tool alongside other requirements, such as capital, which has important consequences for limiting solvency risk and encouraging good risk management in financial institutions.

Systemic liquidity crises, historically and in the recent past, are often driven by asymmetric information about the possibility that one or more financial institutions may be insolvent.<sup>4</sup> This can trigger a drying-up of liquidity in the funding markets in which financial institutions participate, e.g. the unsecured asset-backed commercial paper and repo markets. In other words, solvency risk and liquidity risk are intrinsically linked. From this perspective, one way to help prevent a liquidity

*New  
Basel III liquidity  
standards...*

*... are designed  
to mitigate banks'  
liquidity risk*

*Liquidity  
requirements may  
also limit solvency  
risk...*

*... facilitating  
banks' access to  
funding*

1 Liquidity risk is the risk that a solvent bank is unable to meet its cash flow needs using its own stock of liquidity and borrowed funds without materially affecting its daily operations or overall financial condition.

2 Basel Committee on Banking Supervision, "Basel III: A global regulatory framework for more resilient banks and banking systems", December 2010 (revised version of June 2011).

3 The interlinkages between the liquidity requirements and central bank funding are an important strand of the Basel Committee work. It is of crucial importance to ensure that liquidity ratios do not hinder or conflict with central bank policies.

4 See, for example, ECB, "Liquidity hoarding and interbank market spreads", *Financial Stability Review*, June 2009.

crisis would be to establish a combination of prudential requirements ensuring, inter alia, that liquidity risk stemming from uncertainty about bank solvency is substantially mitigated.

This special feature is structured into three sections. The first section provides a research perspective on the role of liquidity as a prudential tool to mitigate risk, focusing on the less debated issue of how liquidity differs from capital. Before the recent crisis, the regulatory debate focused largely on capital requirements, directed at ensuring the solvency of financial institutions. This section highlights how liquidity holdings can contribute to financial stability in ways that are complementary to capital. The second section discusses how selected key features of the Basel III liquidity rules can help reap the theoretical benefits of liquidity in practice. The third section concludes with an overview of the issues discussed and outlines the importance of ensuring a consistent implementation of the prudential requirements across jurisdictions.

### RESEARCH ON LIQUIDITY AS A RISK MITIGATOR

One of the key functions performed by banks in the economy is maturity transformation, i.e. banks typically take in deposits or obtain short-term funding in wholesale markets and use these funds to make longer-term investments. On the liabilities side, deposits can be withdrawn on demand, thus providing depositors with valuable flexibility in making payments as they need. Similarly, short-term market funding may not be rolled over when it comes due. On the assets side, long-term investments are often risky and illiquid in that their liquidation before maturity entails a loss. Maturity transformation gives rise to liquidity risk since, by definition, an entity engaging in maturity transformation cannot honour a sudden request for full withdrawals.

In their lending and investment activities, banks also perform an important function of overcoming information asymmetries. For example, banks create and invest in complex, information-intensive assets, select suitable borrowers to provide financing and use resources to monitor a borrower's activities over the lifetime of a loan, thus enhancing the probability of loan repayment. The private information inherent in bank investments makes banking itself an opaque business. Moreover, the very nature of banking business leaves banks exposed to credit risk (a possibility that some loans will not be repaid, for example) which may, ultimately, jeopardise banks' ability to repay their investors.

The resulting uncertainty about a bank's solvency can indeed trigger withdrawals of funds, or a "run". This may require liquidation of illiquid investments and, in turn, lead to insolvency. Given such powerful feedback effects between solvency risk and liquidity risk in banking, it is natural to ask whether liquidity can help to mitigate these risks. This is of key importance as the failure of one bank can impose externalities on other banks through, for example, fire-sales and financial contagion.<sup>5</sup> Weakness in the banking sector can also affect the functioning of the entire economy through the supply of bank loans, with a potential over-investment in upturns and an abrupt tightening of the credit supply in downturns.<sup>6</sup>

With regard to potential mitigators of bank risks, both equity capital and liquidity buffers can, in principle, fulfil this role. Indeed, in the canonical Black-Scholes-Merton

*Banks face liquidity risk...*

*... and solvency risk...*

*... and these risks are intrinsically linked*

*Both liquidity buffers and capital mitigate bank risks...*

<sup>5</sup> See, for example, V. Acharya and S. Viswanathan, "Leverage, moral hazard, and liquidity", *Journal of Finance*, Vol. 66, Issue 1, 2011; F. Allen and D. Gale, "Financial contagion", *Journal of Political Economy*, Vol. 108, No 1, 2000; and M. Brunnermeier and L.H. Pedersen, "Market liquidity and funding liquidity", *Review of Financial Studies*, Vol. 22, No 6, 2009.

<sup>6</sup> For example, T. Adrian and H.S. Shin, "Financial intermediaries, financial stability, and monetary policy", *Federal Reserve Bank of New York Staff Reports*, No 346, 2008; and C. Borio and P. Lowe, "Asset prices, financial and monetary stability: exploring the nexus", *BIS Working Paper Series*, No 114, 2002.

... but liquidity can be complementary to capital

framework,<sup>7</sup> both greater holdings of safe liquid assets and greater reliance on equity finance can reduce bank risk. *Ceteris paribus*, allocating more funds to safe liquid assets reduces asset risk in terms of the volatility of asset returns, while increasing equity reduces solvency risk for any given level of asset risk. As a result, there is no unique optimal combination of cash-to-assets and equity-to-assets ratios in this framework and the goal of controlling bank risk can be achieved through many different combinations of the two.

The Black-Scholes-Merton framework rests on some key assumptions, however. There are no transaction or information costs, all information that can be known is known equally by all parties, and there is no liquidity risk as all securities are perfectly liquid and can be liquidated without incurring any costs.

When these assumptions are modified, the effects of liquidity holdings and equity capital on bank risk are no longer the same.

For example, deviating from the assumption that all securities are equally and perfectly liquid and, instead, explicitly considering the liquidation costs of banks' long-term investments can motivate the holding of liquidity buffers. Liquidity buffers reduce the costs of premature liquidation and thus mitigate liquidity risk, which can arise as a result of depositors' requests for early withdrawal of funds or investors' refusal to roll over maturing debt.<sup>8</sup> Liquidity holdings can also protect banks against early withdrawals motivated by wrong information about the outcome of banks' risky investments.<sup>9</sup> Without holding liquidity, banks offering demandable deposits would subject themselves unnecessarily to a costly liquidation of their portfolio in the event that they fail to meet withdrawals, even though the outcome of their risky investments is actually favourable.

Another departure from the Black-Scholes-Merton framework is to allow for an asymmetry of information between banks and investors, which leads to a potential conflict of interests between the two. Such a conflict of interests may arise when banks are opaque and outside investors providing funds cannot assess the quality of the bank's risk management in real time.<sup>10</sup> In this case, banks may have incentives to take on excessive risks.

Holding liquidity buffers in addition to equity capital might reduce banks' incentives to take on too much risk. Liquidity helps to better align banks' incentives with the interests of their investors because holding safe liquid assets limits the extent to which investors lose from high-risk investment strategies.

When banks are opaque and their long-term investments illiquid, three potential benefits of liquidity in comparison with capital can be highlighted.<sup>11</sup>

First, **maintaining liquidity buffers in advance saves on liquidation costs**. Liquidity buffers can help to avoid costs of a premature liquidation of long-term investments, and to prevent fire-sale externalities and financial contagion. During financial crises, when assets can be liquidated or sold

7 See, for example, R.C. Merton, "On the pricing of contingent claims and the Modigliani-Miller theorem", *Journal of Financial Economics*, Vol. 5, 1977.

8 See D. Diamond and P. Dybvig, "Bank runs, deposit insurance, and liquidity", *Journal of Political Economy*, Vol. 91, 1983; and Z. He and W. Xiong, "Dynamic debt runs", *Review of Financial Studies*, forthcoming.

9 C. Calomiris and C. Kahn, "The role of demandable debt in structuring optimal banking arrangements", *American Economic Review*, Vol. 81, 1991

10 As in J. Tirole, *The Theory of Corporate Finance*, Princeton University Press, 2006.

11 This analysis is based on C. Calomiris, F. Heider and M. Hoerova, "A theory of bank liquidity requirements", Twelfth Jacques Polak Annual Research Conference, International Monetary Fund, Washington, DC, 10-11 November 2011.

only at a significant loss, even a large capital buffer may be insufficient to prevent contagion between financial institutions. In this case, liquidity requirements can help to internalise some of the negative externalities that are generated by the price impact of selling in a falling market, and lower banks' market liquidity risk.<sup>12</sup>

Second, **the value of safe liquid assets is generally readily observable while the value of capital is not.** The value of capital depends on the value of risky assets held by banks. Safe liquid assets can play a doubly important role in banking, not just because of their low risk, but because their value can be easily assessed and agreed upon by banks' counterparties, should such a need arise (e.g. in bankruptcy). This may not hold true for all bank assets, some of which may be complex and the value of which can only be determined at some cost (time, auditing, etc.).

*Value of liquid assets is readily observable*

Third, **by investing in safe liquid assets, banks commit to removing solvency risk from a portion of their portfolio.** Such a commitment affects the way banks' counterparties, who lack precise information about banks' assets and behaviour, view the risk management of banks. This makes it easier for banks to obtain financing from, for example, retail depositors or interbank markets, thus lowering banks' funding liquidity risk.

*Liquidity holdings help align interests of banks and investors*

In sum, in an environment in which some of the banks' investments are illiquid and the quality of bank risk management is not observable by outside investors,<sup>13</sup> both liquidity and capital can affect the solvency and liquidity risk of a bank. Managing bank risk can no longer be achieved through many different combinations of liquidity and capital, as in the Black-Scholes-Merton framework. The optimal combination of liquidity buffers and equity capital minimises the overall costs associated with early liquidation, curbs incentives for bad risk management and balances the benefits of holding liquidity with the opportunity costs of liquidity that stem from foregone long-term investment opportunities.

Bank counterparties, such as depositors or other financial institutions, who are exposed to the consequences of banks' negative performance, may exert sufficient market discipline to ensure that banks voluntarily choose socially optimal liquidity holdings. In this case, there would be no need for explicit regulation. However, in the presence of externalities, such as fire sales, a bank's private choice of liquidity buffers will not reflect what is socially optimal.<sup>14</sup>

*Liquidity regulation necessary owing to externalities or distorted bank incentives*

Similarly, an expectation of public sector support for banks in a crisis can distort the incentives faced by financial institutions and their counterparties. Owing to such undesirable moral hazard consequences, the liquidity buffers chosen by banks could again be insufficient and too low.<sup>15</sup> Such considerations call for regulators to set and enforce rules that implement socially optimal prudential standards. This will be discussed in the next section.

12 R. Cifuentes, G. Ferrucci and H.S. Shin, "Liquidity risk and contagion", *Journal of the European Economic Association*, Vol. 3, Issue 2/3, 2005.

13 While it is impossible to fully eliminate information asymmetries, progress has been made in recent years in the field of information disclosure of risk management data, practices and governance (namely concerning counterparty and risk management information).

14 See, for example, E. Perotti and J. Suarez, "A Pigovian approach to liquidity regulation", *International Journal of Central Banking*, Vol. 7, 2011.

15 Recent papers considering the effects of government bailouts on banks' maturity mismatch and financial stability include E. Farhi and J. Tirole, "Collective Moral Hazard, Maturity Mismatch, and Systemic Bailouts", *American Economic Review*, Vol. 102, No 1, 2012; and T. Keister, "Bailouts and Financial Fragility", *Federal Reserve Bank of New York Staff Reports*, No 473, 2010.

*The Basel Committee has proposed two new liquidity standards: LCR and NSFR*

*Use of the buffer in times of stress can help prevent a systemic liquidity crisis*

*Eligible liquid assets must satisfy certain criteria*

## REAPING THE BENEFITS OF LIQUIDITY THROUGH REGULATION

In response to the inadequacy of banks' liquidity risk management practices that was exposed by the financial crisis, in December 2010 the Basel Committee proposed two new standards establishing minimum levels of liquidity: the **liquidity coverage ratio (LCR)** which aims at ensuring that banks hold sufficient high-quality liquid assets to withstand an acute stress scenario lasting one month; and the **net stable funding ratio (NSFR)** which increases incentives for banks to fund themselves using more stable sources on a structural basis.<sup>16</sup>

This section expands on selected features of the liquidity requirements as outlined by the Basel Committee, focusing on how they can help to reap the potential benefits of liquidity as a risk mitigator.

### Building up liquidity buffers that can be used in times of stress

Similarly to the buffer components in the capital regulation, such as the counter-cyclical capital buffer, a framework allowing the liquidity buffer to be used in times of stress is of crucial importance. This relates to the systemic benefits of banks holding liquidity buffers, namely the prevention of fire-sale externalities and financial contagion, as explained in the previous section.

Although such a proposal is not yet embedded in the Basel III text, work to develop such rules is ongoing at the Basel Committee. The aim is to allow banks to make use of their stock of liquid assets, without stigma, in the event of a liquidity shock, i.e. thereby temporarily falling below the 100% minimum requirement.

Indeed, this component of the liquidity regulation is not only important for micro-prudential reasons, but also from a wider market and systemic perspective. If the liquidity buffer could never be released, the LCR requirement would act pro-cyclically and could worsen the impact of liquidity shocks, as banks would be unable to use their liquid assets in response to a shock. This could lead to liquidity hoarding at a time when it is the most detrimental from a system-wide perspective, i.e. when liquidity dries up.

In addition to allowing banks to draw on their liquid assets in times of stress, the LCR could be applied in a dynamic manner to ensure counter-cyclical effects. For example, a time-varying ratio – where the minimum requirement could be set above or below 100%, depending on cyclical or structural shifts in banks' liquidity risks – could help to “lean against the wind” when liquidity is abundant and provide a valuable buffer for banks to use when liquidity becomes scarce.

### Requiring holdings of high-quality liquid assets

A cornerstone of the liquidity regulation and specifically the LCR is the requirement for banks to hold a minimum level of high-quality liquid assets to withstand a stress scenario lasting 30 days.

This relates to the important role that holdings of safe liquid assets play in banking, particularly as regards their observability and ease of valuation.<sup>17</sup>

Eligible liquid assets in the Basel III liquidity regulation must satisfy certain criteria, namely be safe, liquid in private markets, central bank eligible in normal times and resilient in a crisis. These criteria

<sup>16</sup> The liquidity standards are currently under observation until their implementation (2015 for the LCR and 2018 for the NSFR).

<sup>17</sup> Liquid assets should allow for an easy valuation using widely accepted valuation models that can be run with publicly available data and that do not depend on strong assumptions. As a result, complex or exotic products would not qualify as liquid.

are linked to two key objectives of the liquidity regulation: (i) banks should rely on their own ability to raise the necessary funding in normal circumstances and in times of stress, thus internalising their liquidity risks and reducing excessive reliance on central banks as liquidity providers; and (ii) liquid assets must be convertible into cash at short notice, irrespective of a bank's own condition and market dislocations, without accepting large discounts or haircuts.

While an excessively broad definition of liquid assets would not achieve the aim of requiring banks to price their liquidity risks (as holding liquid assets may have an opportunity cost in terms of foregone higher returns), an excessively narrow definition could also have unintended consequences, namely risks of segmentation in certain asset markets and “cliff effects” (i.e. an abrupt market reaction due to situations in which an eligible liquid asset loses its eligibility owing to a rating downgrade, for example).

Cliff effects can cause instability in the sense that banks may not be able to comply with the LCR if a security on which they are relying suddenly “loses” its eligibility. At the same time, banks could pre-emptively sell “close-to-the-cliff” securities, causing downward pressure on their price. The more gradualist the approach towards the liquidity buffer, the less the risk of cliff effects and related adverse effects on banks' liquidity management and the financial markets. In practice, this would mean incorporating gradual quantitative, market-based metrics to either replace or supplement the risk weights and rating-based criteria for determining the eligibility of liquid assets in the regulation.

Moreover, the pool of liquid assets should be composed of diversified assets that can withstand different types of shocks. Such diversification would help to limit concentration risk and ensure that the objectives of the liquidity buffer can be fulfilled under a broad set of circumstances.<sup>18</sup>

#### Establishing appropriate liquidity disclosure rules

As highlighted in the previous section, reducing information asymmetries regarding banks' risks through transparent holdings of liquid assets should help to make banks more resilient. If markets are aware that banks hold a buffer of high-quality liquid assets, proportionate to the liquidity risks taken, this should inspire confidence and reduce liquidity risk to individual banks and the banking system as a whole.

In practice, however, establishing appropriate disclosure rules for banks' liquidity positions is challenging, given the complex trade-off that exists between the potential stabilising effects of such disclosure in normal times and the potential destabilising effects in a stress situation.

Disclosure enhances transparency and may strengthen market discipline. In times of stress, it can reduce pro-cyclicality by easing investor uncertainty as regards counterparty risks. However, publicly disclosing liquidity positions in a stress environment (where they may fall below the minimum threshold) could also increase pro-cyclicality, especially if investors are not sufficiently aware that banks can draw from the liquidity pool in these times.

This is another important area where work is ongoing at the Basel Committee.

*Disclosure rules are crucial to maximise positive externalities and minimise destabilising effects in a crisis*

<sup>18</sup> The Basel III liquidity rules allow for some diversification in the pool of liquid assets by allowing level 2 assets to account for only 40% of the total and by providing qualitative guidance on diversification within asset classes.

*An appropriate calibration of banks' liquidity mismatches will help address vulnerabilities revealed by the crisis*

### Calibrating cash inflows and outflows

As discussed in the previous section, the degree of uncertainty in covering mismatches between future cash outflows and cash inflows is particularly high in banking. A key aspect of the financial crisis was banks' over-reliance on short-term unsecured market funding to finance illiquid assets. The ability to roll over this funding proved to be fragile and heavily reliant on market confidence, giving rise to negative risk externalities when this funding dried up. To address these vulnerabilities, the liquidity regulation aims to determine the behaviour of banks' cash inflows and outflows in a stress situation – particularly over the critical time horizons of one month and one year – in order to better match the maturity of banks' assets and liabilities.<sup>19</sup>

To achieve this, stress factors, e.g. run-off rates, are applied according to the characteristics of banks' assets, liabilities and type of counterparty. In particular, the Basel framework distinguishes between more stable sources of funding, e.g. retail savings, secured funding and deposits from small and medium-sized companies, and more volatile funds, such as unsecured wholesale funding. Each funding type thus receives run-off factors that reflect the risk of withdrawal based on empirical evidence.

A probable impact of this is that the relative size of funding markets for different sources and maturities may change, an aspect which needs to be carefully assessed.

### Interaction with the central bank operational framework

Given the crucial role that central banks play in providing liquidity to banks, the treatment of central bank operations in liquidity regulation is of great importance. The liquidity ratios are indeed likely to induce behavioural and market changes that can have consequences for central bank operations and monetary policy implementation. The nature and magnitude of such effects will depend on the design of each central bank's operating framework, which varies considerably across countries.

In the liquidity regulation, central bank eligibility is a necessary but not a sufficient criterion for inclusion in the buffer of liquid assets. There is therefore no complete alignment between the definition of liquid assets and the central bank's collateral framework. The underlying reason for this is that the LCR should encourage banks to self-insure against both idiosyncratic and systemic liquidity shocks by holding adequate cushions of liquid assets providing the first line of defence against liquidity stress. This is an important safeguard against moral hazard and the reduced market discipline that could otherwise result and reflects the principle that the central bank is the lender of last resort, not the lender of first resort. Moreover, this is a natural outcome of an international rule that needs to apply in different monetary policy operational frameworks. At the same time, the LCR should not compromise central banks' ability to achieve their monetary policy objectives. Indeed, the LCR should support their ability to stabilise markets in times of stress. Key issues in this context are whether the LCR should differentiate between normal circumstances and times of stress, for example by accounting for the capacity to borrow from the central bank as a liquid asset in times of stress or by setting higher rollover rates for central bank facilities in times of crisis; or whether rollover rates for central bank funding should be specific to the type of central bank facility used. Further work in this field seems warranted.

Overall, the complex interactions between the liquidity regulation and the central bank's operational framework suggest that neither of the two can be treated in isolation and that a complete alignment

<sup>19</sup> While the LCR captures the short-term part of banks' maturity mismatch (30 days), the NSFR aims to address banks' longer-term structural liquidity mismatch by requiring a minimum amount of stable funding based on the liquidity characteristics of banks' assets over a one-year period.

*Complex interactions are expected between liquidity regulation and central banks' operational frameworks*

of the frameworks would not be desirable either. The regulation should instead recognise the interlinkages and respective purposes in order not to hinder the effectiveness of their functions. While it may be necessary, especially in the short term, for central bank operations to respond to changes in counterparty behaviour induced by the liquidity regulation, the new liquidity standards should result in greater resilience of the banking system over the longer run, with a positive net effect also on the implementation of monetary policy.

### Limiting incentives for regulatory arbitrage

Finally, the incentives for regulatory arbitrage that will be generated by the liquidity requirements and the – unintended – consequences associated with these incentives also need to be considered. Regulatory arbitrage can be considered as “rent seeking” through the exploitation of loopholes in the regulation and can have harmful effects by reducing the overall strength of the standards or leading to outcomes inconsistent with the objectives by inducing banks to engage in certain transactions that they would otherwise not enter into, which could increase the vulnerability of the financial system.

A potential opportunity for arbitrage in the liquidity regulation is the ceiling on level 2 assets which limits the share of such assets to 40% of the total buffer. While the aim of this restriction is to ensure a minimum level of high-quality assets in the pool, the weaknesses identified on its operationalisation, which are under review by the Basel Committee, could allow banks to fulfil the LCR by undertaking securities financing transactions using level 2 or non-qualifying assets.

This is just one element of the regulation which illustrates that the potential for “playing” the standards exists and that supervisors need to remain on high alert to identify possible arbitrage transactions.

### CONCLUDING REMARKS

This special feature highlights that liquidity and solvency risk are intrinsically linked in banking and argues that liquidity requirements, in addition to mitigating liquidity risk, can also have important consequences for limiting solvency risk and for encouraging good risk management in financial institutions. Liquidity requirements can be an especially useful means of mitigating bank risks in an environment in which some of the banks’ investments are illiquid and where information asymmetry exists between banks and their investors about the quality of bank risk management.

Holding liquidity buffers in addition to equity capital might reduce banks’ incentives to take on excessive risk by better aligning their incentives with the interests of their investors. This is because holding safe liquid assets limits the extent to which investors can lose from banks’ high-risk investment strategies. Moreover, liquidity holdings can help to save on liquidation costs, as well as prevent fire-sale externalities and financial contagion. The corresponding reduction of market liquidity risk and of information asymmetries regarding risk management in turn facilitates banks’ access to borrowing, thus lowering their funding liquidity risk.

Key features of the proposed Basel III liquidity rules include a proposal for using the stock of liquid assets in times of stress, which enhances the systemic benefits of holding liquidity buffers, namely the prevention of fire-sale externalities and financial contagion. The definition of what constitutes “safe and liquid assets” is also crucial, ensuring that eligible assets are easy to observe and value. Holding these instruments should result in banks internalising their liquidity risk and reduces the reliance on central banks as liquidity providers. Theory also points to the positive effects of

*Supervisors must be alert to incentives for regulatory arbitrage and related consequences*

*Holding liquidity may improve banks’ risk management incentives...*

*... and lower banks’ market and funding liquidity risks*



disclosing banks' liquidity positions, mainly in terms of reducing information asymmetries between counterparties. In practice, however, care needs to be taken as regards the potentially destabilising effects of such disclosure in a stress situation. Carefully designed scenarios regarding banks' inflows and outflows over an appropriate time horizon, particularly under stressed conditions, are also key to minimising banks' funding liquidity risk. Lastly, the regulation must recognise the complex interactions with central bank operations and support central banks' ability to stabilise markets in times of stress.

*First harmonised  
rules on liquidity*

In contrast with international bank solvency standards which date back to the 1980s, liquidity requirements have so far escaped international harmonisation. Indeed, national prudential rules on liquidity, where they exist, differ substantially from country to country. The new Basel III liquidity standards therefore constitute the first instance of an international consensus on liquidity requirements.

*Consistent  
implementation  
across jurisdictions  
is crucial*

In this context, further study of the interlinkages between capital and liquidity regulation, as well as the consistent implementation of the harmonised liquidity requirements across jurisdictions, are of key importance.