

Liquidity risk management between systemic and prudential regulation

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Today, building capacities to manage liquidity risk at the level of banking institutions is the main means of strengthening the prudential regulatory framework -- and by extension, to fostering systemic stability. Building these capacities to manage a risk that's as old as banking itself will in the short-term rely on two key elements: stress testing and scenario analysis, especially to identify the risks in structured investment vehicles (SIVs) and other off-balance-sheet structures, and a reinforcement of the Internal Capital Assessment Process (ICAAP) to explicitly address liquidity risk.

It's an observation that has been made repeatedly during the current crisis: the prudential regulatory frameworks in place prior to the events, and the risk management functions that have been developed to ensure compliance with those regulations, should have acted as a safeguard against a crisis of this depth and duration.

The by-and-large failure of these expectations has now given rise to serious calls for a new level of regulation, this time at the systemic level. The idea is that we are in dire need of a macroprudential regulatory framework that transcends an individual financial institution in terms of managing risk drivers. The argument is that financial stability is a public – and now global – good, and it cannot be expected to emerge from the self-interested actions of a host of financial market actors. Therefore we need a layer of prudential regulation above and beyond individual institutions, and above even the national level, designed to manage systemic risk.

While laudable, this ambition is impractical. First of all, we need better prudential regulation today, not in 5 years' time -- or whatever the realistic timeframe is for putting into place a detailed and ratified international agreement. Secondly, who will administer this macroprudential regulation? While preventing future credit bubbles is a legitimate goal, is it realistic to expect the US government to relinquish prudential authority on domestic credit markets to, for instance, the IMF?

Despite a global economy and integrated capital markets, prudential regulation will, for the foreseeable future, stay national. But this is not to say that prudential regulation couldn't and shouldn't evolve to establish the conditions for systemic stability rather than continue to assume that it will emanate from individual regulatory compliance. This is very much in line with the Basel Accords, which currently serve as guidelines for the banking systems of the world's leading economies. And the Accords themselves are evolving towards a macroprudential framework that guides the organisation of individual institutions towards more integrated risk management functions.

Liquidity risk management

Liquidity risk management is an ideal focal point to illustrate the relationship between systemic and prudential regulation for several reasons. By liquidity, we mean funding liquidity as defined by the Bank for International Settlements in 2000: "liquidity is the ability to fund increases in assets and meet obligations as they come due." Liquidity risk is the main risk generated by bank balance structure sheets. It is therefore the bridge between individual banking institutions' risk-taking behaviour and its macroeconomic impact.

Economists have traditionally distinguished between two basic functions of the banking sector. The first is related to banks' allocation of capital, which they direct to productive investments by identifying and granting credit to suitable borrowers and then monitoring them. This function is directly related to the construction of asset portfolios (an increase in assets that need funding) and the take-up of credit risk by the banking sector.

The second essential role of banks is to perform a maturity transformation by financing the resulting long-term asset portfolio with short-term lending, thereby providing liquidity to other sectors of the economy. This allows households and companies to take on long-term debt against short-term assets (such as revenue streams from employment and sales). By pooling the assets of many depositors and offering credit to borrowers, banks effectively provide insurance against the uncertain liquidity requirements of households and firms. While the liquidity needs of an individual household or company may be difficult to foresee, in normal circumstances some individuals' and companies' high demands for liquidity will typically be offset by low demands of other investors. Hence, in normal times the liquidity needs of large groups of households or firms are reasonably predictable. As a consequence, when savings are pooled together, a significant share of deposits can be used to make productive long-term loans, while a smaller share is held back as reserves to meet the demand of depositors for liquidity. Loan commitments and lines of credit serve a similar function by allowing borrowers with uncertain future liquidity requirements to take on bank debt as needed. Thus the maturity transformation function that exposes bank establishments to financing liquidity risk is in fact the reverse side of the banking sector providing liquidity to the economy. This is the collective good created by the banking sector.

Old risk, well-managed in normal times...

One of the central lessons of recent events is that, during times of market turbulence, banks are essential providers of liquidity. To ensure that banks are capable of performing this systemically critical role, they must carefully manage their own exposure to funding liquidity risks. Because liquidity problems can have significant effects on both sides of the bank balance sheet, liquidity risks should be evaluated and addressed on an enterprise-wide basis, and should be well-integrated with regulatory and economic capital planning.

Yet, what about the above statement is new? After all, banks have been managing expected liquidity demands since the beginning of the industry itself. Under normal circumstances, this is accomplished by holding a liquidity buffer consisting of liquid assets such as short-dated bonds and other money market instruments equivalent to cash. Funding a share of assets with long-term debt is another means of accomplishing this. Any remaining mismatches in the duration of a bank's assets and liabilities that expose it to interest rate risk can, under normal circumstances, be managed by hedging interest rate changes using derivatives.

Financial innovation, and especially the development of financial instruments and vehicles that decouple debt funding from credit risk, can also be seen as removing liquidity risk from bank balance sheets. This therefore lessens the need for elaborate liquidity risk management. With the growth of the “originate to distribute” model, where credits are securitised and risk transferred to other investors, it has become commonplace to think of the traditional banks whose business is to take deposits and make loans as an outdated economic model, bypassed by modern finance and the “disintermediation” of banks.

...but times are not normal, and the role of banks in the economy has not changed definitively

One of the lessons of the crisis is that under non-normal conditions, unanticipated, system-wide shocks to the demand for liquidity are far more difficult to deal with. Furthermore, events strongly suggest that depository institutions still play a crucial role in the global economy, particularly during times of turbulence. The fact that the investment banking industry has been integrally restructured and aligned with banking groups whose depository institutions are at their core is the case in point. The “originate to distribute” model has been at the heart of the crisis.

The main point here is that during times of system-wide stress, significant liquidity demands can come from both the asset and the liability side of a bank's balance sheet. On the liability side, we have faced serious challenges in the availability and cost of the refinancing of short-term debt in money markets. On the asset side, off-balance-sheet exposures have in several cases been forced onto bank balance sheets. For example, liquidity commitments to structured investment vehicles, commercial paper conduits, and other types of financial structures have led to significant growth in bank assets requiring funding. Dealing with the unplanned growth of on-balance-sheet assets when market liquidity dries up extends to other areas as well, for example, the difficulty of securitizing assets as planned.

The key point here is that banks should still be prepared to deal with unanticipated and correlated liquidity shocks, both for the sake of their own solvency and for the stability of the broader financial system.

Developing liquidity risk management capabilities

Effective liquidity risk management is especially important and demands significant capacities during periods of financial stress. Furthermore, in the last 18 months, liquidity risks associated with SIVs and Asset-Backed Commercial Paper (ABCP) conduits have gone from being “latent” risks to highly acute ones, reinforced by the proliferation of such financial vehicles. The very vehicles assumed to disintermediate the banking sector and remove liquidity risk from the balance sheet turned out to be highly risky, precisely because they accomplished this. Although SIVs or similar vehicles have existed for many years, the underlying credit risks, legal structures, and operations of many recent vehicles were much more complex. Furthermore, the lack of information about where these reside made such products more difficult and costly to value than originally thought.

Stress testing and scenario analysis

Given that, in principle, liquidity risk manifests itself under non-normal market conditions, the tools we use to evaluate market, credit and operational risk on a day-to-day basis under normal market conditions are inadequate. In contrast, stress testing and scenario analysis can provide valuable information about potential balance sheet risks and unexpected expansions of assets. This is especially true for complex investment products. In many cases, the application of such tools to SIVs appears to have been inadequate at best. For example, few institutions explicitly explored scenarios in which credit ratings were downgraded. They failed to consider that their assets could fall sharply in value or that investors might not want to continue financing these vehicles – and the impact each of these possibilities could have on the bank.

In fact, most of these vehicles reproduced the liquidity mismatch that naturally exists in bank balance sheets in that they contained long-term assets funded by sometimes very short-term liabilities. However, an explicit liquidity risk management structure was mostly absent and banks did not realise the potential funding/liquidity problems that these vehicles would face if there were sudden market movements or if perceptions of credit risk changed. Furthermore, they did not fully explore scenarios in which problems with these entities could have repercussions for banks, such as the need to provide liquidity support to a vehicle or to incorporate some of a vehicle's assets into a bank's balance sheet.

Liquidity risk and regulatory capital adequacy

Although bank liquidity management and regulatory capital management may be conceptually distinct, the current crisis underscores how, in practice, liquidity management and regulatory capital management are intimately related, particularly in times of financial stress.

Liquidity problems always have the potential to affect bank balance sheets and capital adequacy; in the immediate past several large global banks ended up having to deal with unexpected asset expansions arising from a variety of liquidity stresses related to the asset side of the balance sheet.

Assessment of potential liquidity risks should be fully integrated into a bank's analysis of both regulatory and economic capital -- the two are supposed to converge under the Basel 2 regime. Currently, banks are not bound to generate specific capital attributions for liquidity risk; that is, they are not bound to internally quantify liquidity risk in regulatory capital terms as they must for market or credit risk. However, to capture market liquidity risk in capital adequacy assessments, banks may decide to make adjustments in other risk areas, such as by embedding market liquidity risk premiums or applying market liquidity haircuts in pricing models and valuations, or by adjusting assumed holding periods – all of which increase capital attributions in market or credit risk.

Concerning the funding of liquidity risk, it is not clear whether banks have been able to establish a clear link between funding/liquidity parameters and robust capital attributions. However, through testing and scenario analysis – exercises that capture both bank-specific problems and broader market disruptions – banks should still be able to assess the impact that problems in funding-liquidity risk can have on capital adequacy.

Under Basel 2, banks are required to put into place an internal regular risk review process for assessing the ICAAP, intended to ensure that all material risks are adequately captured, including liquidity risks. Restructuring the ICAAP to adequately take liquidity risk into account is a vital objective for bank risk management in the aftermath of this crisis ■