Liquidity risk in the banking sector: the Belgian perspective

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Introduction

In its recent analysis of the developments in liquidity risk management practices in complex financial groups, the Joint Forum (2006), the cross-sectoral committee of financial supervisors, defines funding liquidity risk as “the risk that a firm will not be able to efficiently meet both expected and unexpected current and future cash flow and collateral needs without affecting either daily operations or the financial condition of the firm”. Funding liquidity risk is particularly relevant for banks, as it is inherent in their traditional role in maturity transformation; i.e. making use of short-term funding to invest in long-term assets. This maturity transformation function by its nature entails liquidity risk, since credit institutions face the risk that depositors will withdraw their funds at short notice, forcing the institution to dispose of illiquid assets to meet depositors’ demands.

Although liquidity crises at financial institutions are relatively uncommon, their impact is potentially severe. The prudential supervision of individual credit institutions’ liquidity risk is therefore particularly important (the micro-prudential approach). Moreover, liquidity shocks affecting financial institutions have the potential to propagate through the financial system via direct and indirect contagion effects (e.g. interbank credit exposures and reputation effects) and consequently threaten financial stability. This motivates central banks to monitor the liquidity of financial institutions and financial markets (the macro-prudential approach).

Liquidity risk management has recently become an important area of focus for banks, following development of risk management processes for risks treated under the first pillar of Basel II, i.e. credit, market, and operational risks. Explanations for banks’ heightened attention to liquidity risk include both developments in the financial environment and supervisory initiatives. In order to provide some insights from a Belgian perspective on these issues, this paper discusses general principles for the sound management of liquidity risk set forth by international supervisory bodies and the industry, as well as the Belgian prudential approach to the supervision of banks’ liquidity risk, which incorporates these sound practices in its requirements. In addition, the paper reviews the essentials of Belgian financial institutions’ liquidity risk positions and management, inter alia, by reviewing the experience gained in a first stress-testing exercise for liquidity risk organised by the Belgian authorities.

A number of developments in the financial environment have significantly altered the context in which banks manage their liquidity positions. These developments, some of which have provided new opportunities for liquidity risk management while others have raised additional challenges, include: the increased integration of money markets and the financial system in general; changes in banks’ funding structure; the strong growth of innovative products in the domain of structured transactions, derivatives and securitisation; and the increased use of banks’ liquid securities portfolios as collateral.
First, the globalisation that characterised the economy as a whole and the financial system in particular during the last few decades significantly affected credit institutions’ liquidity management. More specifically, the introduction of the euro led to a single integrated money market, thereby influencing the liquidity position of banks, as euro area institutions obtained access to a larger, more competitive market. On the other hand, the further integration of financial markets gave rise to increased potential for financial contagion, as liquidity difficulties at one institution may be more rapidly transferred to other seemingly separate financial institutions.

Second, the growing importance of – potentially more volatile – wholesale funding sources for banks (relative to retail funding sources) might have rendered banks’ liquidity position more vulnerable to sudden withdrawals, and obliges banks to closely monitor their standing in debt markets. Moreover, retail funding may also have lost part of its stickiness due to increased customer awareness of prices and risks resulting from the increased transparency and competition for these products, as well as to lower switching costs ensuing from technological developments such as internet banking.

Third, product innovations in terms of loan sales and asset securitisation have increased the liquidity of certain assets, although one should recognise that the potential for securitisation and loan sales might be limited in stressful periods. In contrast, the strong growth in off-balance-sheet commitments and use of innovative financial products may also have resulted in potentially more volatile liquidity positions, stemming from the uncertainty surrounding the potential cash-flows related to these products and the lack of experience with these products in times of stress.

Fourth, the range of eligible collateral that can be used in monetary policy operations and payment and settlement systems has been broadened. The Eurosystem recently included high-quality bank loans as eligible collateral for monetary policy transactions. In addition, banks are increasingly able to make use of lower-quality securities in secured transactions and to re-use the collateral they obtain via this kind of transactions. However, the intensified use of high-quality securities as collateral in different transactions and systems (monetary policy transactions, Real-Time Gross Settlement (RTGS) systems, derivatives transactions etc.) and secured money market transactions significantly reduce banks’ portfolios of unencumbered liquid securities.

Given the number of fundamental changes in the liquidity characteristics of financial institutions and markets and the importance of adequate liquidity risk management and supervision, it is crucial that banks’ management systems and authorities’ supervisory tools evolve to take account of these significant developments. Therefore, both financial institutions and authorities have recently taken a number of initiatives to adapt liquidity management and supervision accordingly. This paper provides some insights on the matter from a Belgian perspective.

The rest of this paper is structured as follows. Section 1 reviews the principles of liquidity risk management and the Belgian prudential approach. Section 2 discusses Belgian banks’ liquidity risk management practices. A last section concludes.

1. Principles of liquidity risk management and the Belgian prudential approach

Qualitative and quantitative guidelines developed by regulators, the industry and other parties concerned, such as rating agencies, set the scene for banks’ liquidity risk management. A number of these guidelines have recently been issued or revised. This section portrays the state of play in this domain from a Belgian angle by first discussing some of the principles for the management of liquidity risk developed in international fora, before reviewing the revised Belgian prudential approach to banks’ liquidity risk which builds on these internationally agreed sound practices.

1.1 International principles: guidelines of financial authorities and the financial industry

The most recent internationally agreed set of official sector standards for the management of liquidity risk in banks dates back to 2000 and was issued by the Basel Committee on Banking Supervision (BCBS). The committee’s “Sound Practices for Managing Liquidity in Banking Organisations” (BCBS, 2000) identify strong management information systems, the analysis of net funding requirements under alternative scenarios, diversification of funding sources, and contingency planning as crucial elements of adequate liquidity management for credit institutions (see the Box for a more detailed discussion of the principles). Many of the basic principles developed in these sound practices were adopted by supervisory authorities around the globe. That introduced a certain degree of harmonisation in qualitative supervisory guidelines for liquidity risk management.

(1) See e.g. Basel Committee on Banking Supervision (2000) and Institute of International Finance (2007).
The Institute of International Finance (IIF, 2007), the global association of financial institutions, recently issued an update and private sector response to these official sector guidelines in its report on the “Principles of Liquidity Risk Management”. This private sector contribution aims to raise the standards of liquidity risk management of financial institutions and to promote harmonisation of industry practices. The report provides a perspective on the establishment of good practices for liquidity risk management, offering some 44 detailed recommendations and thereby clearly addressing the fundamental developments in the liquidity characteristics of financial institutions and markets, summarised in the introduction to this article.

In this respect the IIF report acknowledges that the BCBS principles “represent a sound foundation from which to build upon to reflect the increase in the complexity of the financial industry and its products since their adoption in 2000”.

The report begins with the basic assumption that there is no “one-size-fits-all” approach to liquidity risk management, as frameworks have to be tailored to the activities and business model of each individual financial institution. Bearing this in mind, the principle-based recommendations offer detailed guidelines for the establishment of an appropriate liquidity management framework. If certain

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<th>Box – Sound Practices for Managing Liquidity in Banking Organisations (BCBS, 2000)</th>
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<td>Essentially, according to the Basel sound practices, adequate management of the liquidity position of credit institutions presupposes:</td>
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<td>− <strong>strategy and management structure</strong>: the institution maintains a strategy for the day-to-day liquidity management, formalised in a liquidity policy note that has been communicated to all departments of the organisation involved in activities that may have an impact on the institution’s liquidity position; this strategy is adapted to the activities, risk profile and the overall on- and off-balance-sheet structure of the institution; a separate liquidity strategy is required for each currency in which the institution has material activities; the strategy has been approved by the institution’s top management body; the top management body is regularly informed about the institution’s liquidity position and immediately notified if significant changes in the liquidity position occur; the top management body ensures that the institution’s senior management establishes and maintains a structure that effectively manages and controls the institution’s liquidity position and adheres to the aforementioned liquidity policy; the institution’s senior management is involved in this liquidity management structure on a continuous basis; an element of this structure is the design of limits to the institution’s liquidity position for specified time horizons, limits that are regularly reassessed for their effectiveness; in this context an adequate management information system that allows the institution to measure, monitor and report its liquidity position and net funding requirements in all currencies in which the institution has significant activities is of utmost importance (principles 1 to 5, 10 and 11);</td>
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<td>− <strong>stress-testing</strong>: the institution regularly stress-tests the behaviour of its liquidity position under alternative scenarios (“what-if” scenarios) and reviews whether the assumptions applied in its liquidity management are still valid (principles 6 and 7);</td>
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<td>− <strong>market access</strong>: the institution manages and controls its access to external market funding and pays sufficient attention inter alia to the marketability of assets, the diversification of liabilities (funding sources) and the relationship with important creditors (principle 8);</td>
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<td>− <strong>contingency funding</strong>: the institution maintains and regularly tests a contingency funding plan that specifies the potential course of action in a liquidity crisis in terms of internal procedures, the funding of activities, emergency funding sources, communication strategies etc. (principle 9);</td>
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<td>− <strong>internal controls</strong>: an effective internal control system is in place to ensure that the objectives of the institution’s liquidity management structure and strategy are attained; the institution’s liquidity management is the subject of regular internal audits (principle 12);</td>
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<td>− <strong>transparency</strong>: the institution regularly dispatches adequate information to the general public and to its main creditors, in particular in the context of the management of the market perception of the institution (principle 13).</td>
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recommendations are not implemented as they are felt to be unsuitable or inapplicable for the financial institution in question, institutions are expected to be able to explain why these principles are inappropriate to them. The report refers to this as the “comply or explain” approach. The recommendations are grouped under three broad components of liquidity risk management: (1) governance and organisational issues, (2) the analytical framework for measuring, monitoring and controlling liquidity, and (3) stress testing and contingency planning.

In its report, the IIF also reiterates some considerations for the official sector already expressed in other industry fora. More particularly, the institute is concerned about what it calls the “increasing disconnect” in global markets between cross-border financial institutions that regularly manage their liquidity risk on a group-wide basis, and the different regulatory standards of the local supervisors. Quantitative liquidity requirements, in particular, do still differ widely between jurisdictions (even within the Euro area), ranging from regulatory liquidity ratios in certain countries to only reporting requirements in others. Failure to recognise the more integrated and responsive markets may reduce the efficiency of liquidity management and increase the probability of firm-specific or systematic cross-border liquidity problems, according to the industry, which therefore advocates greater harmonisation of liquidity risk supervision across borders and close collaboration between home and host supervisors of international financial groups.

1.2 Belgian authorities’ initiatives on liquidity risk management

The increased international attention for liquidity risk and industry considerations with respect to liquidity risk supervision have also been reflected in a number of recent initiatives taken by the Belgian regulatory authorities in this context.

To initiate a debate on banks’ liquidity management practices, the National Bank of Belgium (NBB) and the Belgian Banking, Finance and Insurance Commission (CBFA) jointly invited the larger bancassurance groups active in Belgium to present their overall liquidity risk management frameworks in 2005. These presentations were complemented by a written survey containing questions on the institutions’ liquidity risk management practices. Further to these presentations, the CBFA conducted detailed on-site inspections to examine the compliance of the larger Belgian banking groups’ liquidity risk management framework with the BCBS sound practices discussed in subsection 1.1 and in the Box.

In addition, the CBFA launched a consultation process with the industry in order to revise its supervisory approach to liquidity risk for banks and financial holding companies. As a result, the CBFA issued a Circular letter in December 2006 to the institutions concerned which determines the new Belgian approach to liquidity risk supervision in the case of banks, financial holding companies and settlement institutions (CBFA, 2006). (1)

There were various reasons to revise the supervisory approach. First, the old approach, which mainly consisted of unconsolidated reporting requirements, showed shortcomings and was no longer sufficient to provide adequate insights into the liquidity risk position of credit institutions. Indeed, the old reporting scheme only provided an individual company view (instead of a consolidated view) of the institution’s liquidity position, whereas evolving international practices in liquidity management illustrate the increasing integration of liquidity risk management at group level. The non-binding prudential liquidity ratios calculated internally by the CBFA on the basis of the former prudential reporting schemes were consequently to some extent disconnected from the current quantitative assessment tools and ratios used by credit institutions. In addition, most of the supervisory authorities in the neighbouring countries have liquidity regimes that set explicit quantitative requirements. In this respect, the CBFA wants to maintain an up-to-date reporting scheme that enables it to adequately monitor institutions’ liquidity positions without introducing regulatory ratios. Second, the CBFA had never explicitly issued qualitative requirements for liquidity risk management, notwithstanding the fact that the CBFA’s on-site inspections used the BCBS sound practices as a benchmark.

The revised supervisory approach to liquidity risk applicable to credit institutions, financial holding companies and settlement institutions is structured around the following key aspects:

- The revised approach explicitly articulates qualitative requirements regarding liquidity risk management, referring to the internationally agreed BCBS sound practices (see Box). When assessing the compliance of an institution’s liquidity risk management with these sound practices, the principle of proportionality applies. This implies that the supervisor assumes that practices are tailored to the nature, size and complexity of the

(1) The Supervisory Review and Evaluation Process (SREP) of the second pillar of Basel II requires the supervisory assessment of all risks and management practices of the institution. The implementation of this process represented a step towards introduction of the new supervisory approach for liquidity risk. In view of that, the CBFA aligned the revised approach to liquidity risk supervision with that of other second pillar risks such as interest rate risk in the banking book and sector concentration risk.
institutions’ activities and are commensurate with the liquidity risks which these activities entail.

- The CBFA considers that it is not currently expedient to stipulate quantitative liquidity requirements, notwithstanding the existence of quantitative liquidity regulations in neighbouring countries. The current lack of an internationally agreed set of quantitative standards and the potential inappropriateness of one-size-fits-all liquidity limits are factors that underpin this view.

- An updated reporting scheme, scheduled to be implemented from 2008 onwards, will constitute the cornerstone of the new monitoring framework. In general, the new reporting scheme is designed to give detailed information on maturity mismatches, non-maturity products, liquid assets (excluding those posted as collateral in secured transactions), flows related to derivatives, contingent assets and liabilities, and transactions with related parties. The CBFA will calculate prudential liquidity metrics on the basis of the reported information in order to provide insights into the overall robustness of institutions’ liquidity positions, making use of several stress scenarios and related assumptions on potential withdrawals of deposits and contingent credit liabilities, haircuts on liquid assets, the support of related parties, etc. Thresholds will be employed to signal outlying liquidity positions, taking into account the specific characteristics of financial institutions and the quality of their liquidity risk management.

In order to gain insights into both group-wide and individual company level liquidity positions, the CBFA expects financial institutions to report the liquidity tables on a consolidated and a non-consolidated basis. Consolidating institutions may nevertheless opt to exclude immaterial subsidiaries from the consolidated reporting.

In addition, to further limit the reporting burden on consolidating institutions and in order to provide incentives for the establishment of adequate liquidity risk monitoring at group level, the CBFA offers financial institutions the further option to report their internal liquidity ratios and metrics applied at group level instead of using the standard reporting schemes on a consolidated basis. When internal metrics and ratios are reported, the CBFA will assess whether the internal measures comply with certain criteria, such as sufficient scope of consolidation, coverage of all material potential cash flows, etc. This assessment does not entail the validation of the internal liquidity models of institutions but merely the acceptance of the internal ratios as prudential reporting. Furthermore, the use of an institution’s internal reporting keeps the supervisor adequately informed about the state of play regarding the institution’s liquidity management. Consolidating institutions that opt to report internal ratios on a consolidated basis continue to report the standard scheme on a non-consolidated basis so that the supervisor still has a basis for comparison.

The revised Belgian prudential approach to liquidity risk is thus to a large extent based on the adoption of internationally agreed principles (qualitative requirements), and endeavours to align supervisory needs with industry concerns (as it does not impose quantitative requirements but only reporting requirements, with in addition an option to report internally applied ratios).

A fourth and last initiative taken by Belgian authorities with regard to liquidity risk management is the joint organisation by the NBB and CBFA of a first bottom-up liquidity stress test exercise for the larger Belgian banking groups in 2006. This first exercise fitted in with the regular stress test exercises conducted in the wake of the IMF’s Financial Sector Assessment Program (FSAP). Section 2 discusses this liquidity stress test exercise in more detail, as well as some more general features of Belgian banks’ liquidity risk management.

2. Belgian banks’ practices

This section presents the liquidity risk management practices of Belgian financial groups. The first sub-section focuses on the strategy of Belgian groups with regard to liquidity risk management. The second sub-section summarises the main findings of the liquidity risk stress-testing exercise organised jointly by the NBB and the CBFA.

2.1 Main features of Belgian banks’ liquidity risk management

All Belgian financial groups have developed their own strategy to manage liquidity risks. Although strategies differ across institutions, it is possible to identify a set of common features that typically underpin their design. Note that the degree of complexity in the implementation of these principles differ widely across groups and that not all Belgian financial groups are equally far advanced in developing each of these aspects. Nonetheless, the larger groups’ liquidity risk management is generally centred around:

- The establishment of a group-wide liquidity policy: The introduction of a formal framework for liquidity risk management has been initiated in all larger groups. Practical operations are delegated to a local or a central financial market division (treasury), depending on the degree of centralisation.
– The monitoring of day-to-day funding needs and the measurement of liquidity risk: The measurement of liquidity risk is based on a coherent set of liquidity limits, defined in accordance with the desired liquidity risk profile. In practice, Belgian groups define liquidity limits for several time horizons from very short-term (overnight) to long-term structural needs (which can extend to 5 years). The metrics and the limits on liquidity positions vary according to the time horizon chosen. Belgian groups apply stock ratios, a cash-flow matching approach or a combination of both (stock-and-flow approach). Defined limits are either applied centrally, to the consolidated entity, or decentralised at the level of the main local entities.

– The maintenance of a liquidity buffer: Belgian groups rely on a large portfolio of readily available liquid assets that can be sold or mobilised as collateral in the case of unexpected liquidity shortages. The importance of this buffer in the largest Belgian banking groups is discussed in sub-section 2.2.

– The diversification of funding sources: As discussed in sub-section 2.2, Belgian financial groups may rely on several sources of funding and the diversification of funding sources is usually a central part of their strategy. Most Belgian groups consider their retail deposits base as a more stable source of funding. In addition, the largest Belgian groups benefit from high credit ratings which allow them to play an active role on money and capital markets.

– The design of contingency funding plans: The extent to which a contingency funding plan has been devised and tested varies across groups. Like the contingency funding plans of other European groups (see e.g. The Joint Forum, 2006), the contingency plans of Belgian groups usually define a set of actions that need to be undertaken in a crisis. These actions may be clearly specified or determined by an ad hoc liquidity committee. In addition, contingency plans may set conditions for the possibility of channelling funds from one entity to another one. In some groups, a central entity acts as lender of last resort for other group entities. This is especially the case for groups in which liquidity risk management is more centralised.

Not surprisingly, these practices have generally been inspired by methodologies used by other financial groups around the globe and by the sound practices articulated by the Basel Committee (see Box).

Besides these crucial dimensions, the organisation of the larger groups’ liquidity risk management has another characteristic dimension, namely the degree of cross-border or cross-sector centralisation of the liquidity risk management function. The degree of centralisation results from a choice which balances the advantages and the disadvantages associated with liquidity management centralisation. The advantages of centralising the management of liquidity risk are diverse. As put forward by the Joint Forum (2006), it allows development of a common language and a common methodology for liquidity management within a group. In addition, a centrally managed liquidity function makes it possible to concentrate expertise, and benefit from both central management and local or entity-specific expertise. Finally, it enables groups to benefit from scale effects with respect to the concentration of access to market funding, and to transfer centrally managed cash and collateral resources more easily across entities, both in normal circumstances and in a crisis. However, centralisation may also entail certain disadvantages or be difficult to accomplish in practice. The integration of liquidity management across sectors and borders might indeed give rise to a number of methodological difficulties. In this context, when single market access or the transfer of funds and collateral across borders – or especially across sectors – is considered neither feasible nor beneficial, efficiency reasons may motivate the group to adopt a more decentralised structure. In addition, when liquidity is centrally managed, local management may feel less concerned about, or be less informed of, liquidity risk management. Therefore, some groups tend to decentralise the management of liquidity risk in order to increase local management awareness and to capitalise as much as possible on local expertise. Overall, the group’s business model is thus an important determinant of the desirable degree of centralisation.

For those Belgian financial groups that tend to follow the drive towards more cross-border or cross-sector centralisation in liquidity management, centralising liquidity management implies, in most instances, that:

– the liquidity risk framework (involving the definition of policies, responsibilities, methodologies, measurement and limits) is defined at the consolidated level of the group;

– the global consolidated liquidity position is regularly monitored at group level;

– access to specific funding sources (or at least part of the related activities) is centralised in one or a small number of group entities;

– central group management plays an important role in contingency liquidity planning.

(1) The Joint Forum (2006) notes that the stock approach is most commonly used in securities businesses, while banks and insurance companies tend to prefer a cash-flow matching approach, or a combination of both approaches.

(2) For instance, the Joint Forum (2006) notes that “with few exceptions, liquidity risk management is not well integrated” across sectors.
2.2 Stress-testing

This subsection focuses on the sixth principle put forward by the BCBS (2000) in its report on sound practices for the management of liquidity in banking organisations, which specifies that the analysis of banks’ liquidity positions should be based on a large range of different scenarios, including normal conditions but also exceptional circumstances. In particular, banks should consider the impact on their liquidity position of idiosyncratic shocks that are specific to them, and at the same time also be ready to manage liquidity in exceptional circumstances affecting financial institutions and markets more generally.

In order to promote stress-testing practices in individual institutions, the NBB and the CBFA jointly organised a first bottom-up liquidity stress-test exercise in 2006, in the context of the annual stress-tests following on the 2005 assessment of the Belgian financial sector by the IMF(1). The four largest Belgian banking groups participated in this exercise. This sub-section first describes the main features of the exercise and then summarises its main conclusions.

2.2.1 Main features of the exercise

The stress tests were quantitative in nature rather than procedural crisis simulation exercises. Each banking group stressed its liquidity position according to several predefined scenarios over a three month horizon. Specific attention was, however, given to cash-flow changes and the actions taken by groups during the first days of the crisis, as these days are found to be most crucial for the management of a liquidity crisis. Besides a quantitative assessment of the impact of the crisis on their liquidity position, banks also provided qualitative information on the different assumptions made, corrective actions taken, activation of their contingency funding plan, etc.

The exercise was meant to be useful to both banks and authorities and at the same time not too burdensome for the institutions. Accordingly, the institutions were given a great deal of discretion while conducting their liquidity stress tests. As a starting point, only a generic description of three liquidity stress scenarios was provided. Consequently, each institution specified the scenarios and related assumptions in more detail(2). While this approach allowed authorities to gather useful information on specific practices of individual banking groups, it also reduced the comparability of the results across groups.

The tests consisted of three different scenarios. In addition to these three scenarios, banks also provided information on their liquidity position under a base case scenario in which no shocks were assumed, in order to allow for comparison. The choice of the scenarios was based on the survey results of the Joint Forum (2006) which provided some indications on the scenarios used by the financial industry. The first scenario consisted in an idiosyncratic three-notch downgrade of the group entities’ long-term credit rating. The second scenario added another layer to the first scenario by worsening the prevailing market conditions. While in the first scenario the shock was considered to be idiosyncratic, which means that all markets were considered to be functioning well, the second scenario combined the three-notch downgrade with adverse market conditions. In this context, institutions were requested to make assumptions about the impact of a downgrade on their access to markets, assuming adverse market conditions. Finally, in a third scenario, institutions were invited to specify the operational problems that would be the most detrimental to their liquidity position. Operational problems could entail difficulties in accessing certain payment or settlement systems, the freezing of funds at a major counterparty, the non-transferability of collateral, etc.

The participating banking groups were requested to use the highest degree of consolidation possible at the group level of the bank. This implied that foreign entities of the banking group were to be taken into account as much as possible. This is consistent with industry practices as found by the Joint Forum (2006), which observes that when liquidity management is centralised, stress tests are executed on a group basis, though with separate treatment for the liquidity positions of insurance entities which are stressed separately from banking entities.

2.2.2 Main conclusions of the stress-testing exercise

The main findings of the exercise can be structured around three areas: first, the initial liquidity position of Belgian banking groups in normal circumstances; second, the range of different assumptions used by banks to simulate the liquidity shocks under the three scenarios; and third, the outcomes of the tests or the simulated impact of the predefined liquidity shocks on the liquidity position of Belgian banking groups.

Initial liquidity position of Belgian banking groups

In the base case scenario, the starting position, i.e. the liquidity position of Belgian banking groups before any given shock, confirms the general observation that Belgian banks traditionally benefit from a large portfolio

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(1) The 2005 FSAP stress-testing exercise only included a top down stress test for liquidity risk, based upon maturity ladder data reported by credit institutions.

(2) Banks were encouraged to use the output of existing tests and liquidity models used internally.
of unencumbered liquid securities. This portfolio constitutes a crucial source of liquidity in the case of liquidity stress. The available liquid assets expressed as a percentage of total assets presents a stock ratio that may illustrate the resilience of the institutions’ liquidity position at the outset of the tests. It should, however, be noted that this measure of liquidity displays some flaws as it does not take into account the potential volatility of the institution’s liabilities nor the mismatches between the maturity of its assets and liabilities.

The liquid asset position of banking groups is composed of four categories of assets: (i) cash and central bank receivables, (ii) available central bank eligible collateral, (iii) available securities and loans that can be realised via repo transactions, and (iv) available securities and loans that can be realised via outright sales within one week. Collateral already mobilised in other transactions or posted in payment or settlement systems is not included, i.e. only unencumbered collateral is taken into account. Haircuts were applied to each category of liquid assets in order to calculate the cash value of these assets.

On average, 15.4 p.c. of the group’s assets were considered as liquid by the participating banking groups, which illustrates a generally satisfying initial liquidity position. One should note, however, that the effective liquidity of these liquid assets depends on a number of factors which are outside the control of banks, such as the general market conditions, the continuous and smooth functioning of securities settlement systems, the trouble-free transfer of cash and securities across borders and across group entities etc. In addition, the initial liquidity position evidently varied across banking groups. The available central bank eligible collateral is the largest component of liquid assets (European Central Bank/European System of Central Banks) and represents, on average, half of total liquid assets. The portfolio of available securities and loans that can be realised via outright sales is smaller.

Besides this buffer of liquid assets, stable funding sources, together with sources of funding that can be easily mobilised at short notice, also constitute important prerequisites for the effective management of liquidity risks. Belgian banks have a relatively large retail and corporate deposit base. Indeed, according to the ECB (2006), at the end of 2005, the amounts owed to customers(1) by Belgian banks represented 47.3 p.c. of their total assets, while the average for EU banks came to 38-39 p.c. Due to the internationalisation of Belgian banking groups’ activities, the size of banks’ foreign funding sources is increasing over time. This is especially true for wholesale interbank deposits which, despite the high degree of consolidation in the Belgian banking sector, exhibit a fairly low degree of concentration (see e.g. Nguyen, 2003). Finally, thanks to their favourable investment-grade credit ratings, Belgian banking groups enjoy valuable access to market funding.

Assumptions made by banking groups

In each of the scenarios, assumptions needed to be made regarding the impact of the shock on the banking group’s business. Significant variations in the assumptions made by banking groups were observed. This made it more difficult to compare the quantitative results, but it also endowed the participating banking groups with more flexibility and reflected more closely the diversity in banking groups’ liquidity management practices. The differences concerned two types of assumptions: first, the assumptions relating to the size of the shock and its impact on the behaviour of other economic agents (e.g. bank customers such as retail depositors, other financial market participants, etc.), and second, the remedial actions taken, if any.

With respect to the assumptions regarding the size and impact of the shock, there was evident divergence in several parameters. For instance, banking groups assumed different withdrawal rates for retail deposits (current and savings accounts) under the downgrade scenarios. The modelled outflows of retail deposits varied between 0 p.c. and 20 p.c. of total retail deposits, depending on the type of deposits and the institution. The bulk of these outflows took place later than one week after the downgrade, i.e. with a time lag. The minimum and the maximum outflow assumptions may both seem rather extreme, given that the Joint Forum survey (2006) reported that in stress tests conducted by European banks, the percentage of retail deposits exiting the bank in a crisis scenario is typically assumed to be lower than 10 p.c., although some banks assume outflows slightly exceeding 10 p.c.

Belgian banking groups postulated different rates of outflows for wholesale deposits as well. In this context, there was not only a substantial difference across banking groups but also across scenarios, which was less the case for the outflows of retail deposits. In the first scenario (an idiosyncratic downgrade), the impact on wholesale depositors, although significant – with immediate outflows varying between 0 p.c. and 25 p.c., and renewal picking up later on in the scenario – remained limited in comparison with the outflows modelled in the second scenario (the same downgrade in adverse market conditions).
conditions), which ranged between 0 p.c. and 70 p.c. for unsecured funding. This directly results from the fact that a market crisis is likely to affect the banking groups’ counterparts on financial markets as well, while the impact of adverse market conditions on retail depositors is considered to be smaller.

Besides these two examples, other differences were observed. Assumptions concerning access to other funding sources (the repo market, committed credit lines, etc.), the convertibility of currencies, off-balance-sheet activities such as related SPV financing, the protection of the institution’s franchise, the haircut applied to liquid assets etc. also influenced the outcome of the stress tests for each of the participating banking groups.

With respect to assumptions relating to the remedial actions taken by banking groups, two different approaches were adopted. Some banking groups calculated the basic impact of the shock assuming unchanged behaviour, while others incorporated the effects of the (minor to drastic) remedial actions they would take. These remedial actions aimed both at slowing down or halting liquidity outflows and at accelerating the production of new liquidity inflows. For instance, banking groups included the effects of a broad range of different remedial actions having an impact on their asset side. The scope of actions taken by Belgian banking groups in this regard included a revision of lending criteria in order to slow down the production of new assets, the cutback of activities entailing heavy consumption of liquidity (e.g. reverse repo activities and unsecured lending), the exceptional mobilisation of collateral to generate new liquidity inflows, the reallocation of cash within the group, the transfer of liquid assets between entities and the accelerated securitisation of part of the assets portfolio. Remedial actions on the liabilities’ side mainly included changes in the pricing policy so as to retain existing deposits and attract new deposits or alternative sources of funding. Potential emergency lending assistance by central banks was also envisaged as part of banking groups’ toolkit.

Impact of liquidity shocks

Because of the wide diversity of assumptions made by banking groups, presenting aggregate or average quantitative outcomes for the liquidity stress tests is of no use as these figures are very difficult to interpret. Furthermore, it is important to note that this kind of stress test is useful to gain insights into banking groups’ liquidity management and their approach to contingency funding planning, but that its quantitative results only provide an indication about their resilience to withstand liquidity shocks. We can nevertheless draw some conclusions on the impact of liquidity shocks on the Belgian banking sector from the results provided by banking groups.

While banking groups in general appear to be resilient to shocks overall, differences were observed across the banking sector and across scenarios. In the first scenario – i.e. an idiosyncratic shock – the liquidity position of institutions remains positive throughout the scenario thanks to the strong initial long- and short-term credit ratings of the participating groups (none of the banking groups’ long-term ratings drops below investment-grade as a result of the three-notch downgrade). Yet, banking groups with an initially lower starting liquidity position were forced to include the effects of substantial remedial actions to avoid liquidity shortages.

The second scenario, which was to some extent extreme as it combined an idiosyncratic shock with adverse market conditions, was evidently the most detrimental one. In this scenario, some institutions ended up with liquidity shortages. Nonetheless, as in the first scenario, a number of banking groups presented results after remedial actions, while others presented results before incorporating the effects of any remedial actions which could compensate for potential liquidity shortages. It is therefore difficult to compare across groups and to come up with definite conclusions with regard to this second scenario.

Finally, the third scenario, in which an operational disruption triggered the liquidity shock, seemed to lead to temporary disturbances only. These operational disturbances may, however, have a significant impact in the very short term. Most groups mentioned that an operational problem relating to major disruption in (internal or external) payment and/or settlement systems would likely be the most detrimental scenario.

Conclusion

The recent initiatives on liquidity risk management from the private sector and prudential authorities illustrate not only the rapid pace at which liquidity management techniques are developing, but also the interest attached to liquidity risk management and liquidity optimisation techniques. Indeed, liquidity risk management is crucial for banks as they constantly need to consider the trade-off between holding costly liquidity and being able to face future expected and unexpected cash and collateral outflows without affecting their franchise. In that context, prudential authorities are carefully monitoring new developments in industry practices.
The Belgian authorities are also observing these developments closely. Their reaction to the developments comprises several elements. First, the CBFA has revised the framework for liquidity supervision in Belgium. One of the building blocks of the CBFA’s new supervisory approach is a better specification of requirements with respect to the qualitative aspects of liquidity risk management. These requirements are complemented with an updated reporting scheme that will improve the off-site oversight of the liquidity position of banks while refraining from introducing quantitative liquidity requirements.

Secondly, the NBB and the CBFA jointly organised a first liquidity stress-testing exercise, in which all four large banking groups participated. This stress-testing exercise proved very useful, and the CBFA and the NBB will continue to conduct this kind of exercises in the future. In this context, the experience gained from the first exercise and the contacts initiated with the private sector on this occasion will allow refinement of the approach.

Finally, international fora will continue to devote close attention to liquidity management, potentially leading to further harmonisation of the diversity of practices in liquidity supervision. Belgian authorities will continue to actively participate in these initiatives in the future.
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