

08/3

Financial Services Authority

Review of the liquidity requirements for banks and buildings societies

Feedback on DP07/7

May 2008



Contents

1	Overview	3
2	Summary of responses – Lessons learned from recent events	12
3	Summary of responses – Review of existing regimes	27
4	Summary of responses – A more principles-based way forward and Supervisory information	31
5	Investment firms MFA	43

Annex 1: MFA References

Annex 2: List of non-confidential respondents to DP07/7

This Feedback Statement reports on the main issues arising from Discussion Paper 07/7 *Review of the liquidity requirements for banks and building societies*.

Please address any comments or enquiries to:

David Morgan
Financial Services Authority
25 The North Colonnade
Canary Wharf
London E14 5HS

Telephone: 020 7066 1136

Fax: 020 7066 9733

E-mail: dp07_07@fsa.gov.uk

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1 Overview

Background

- 1.1 In December 2007 the Financial Services Authority (FSA) consulted on liquidity requirements for banks and building societies in Discussion Paper (DP) 07/7 (Review of the liquidity requirements for banks and building societies).
- 1.2 We had already started, at the beginning of 2007, to review domestic and international liquidity regimes before the current market turbulence. The DP set out preliminary ideas for reforming liquidity regulation.
- 1.3 Since we published the DP, and following the deadline for responses, there have been several developments worth noting:
 - the current market turbulence has continued;
 - we have continued to engage closely with firms and other interested stakeholders;
 - central banks around the world have taken action to ease the pressures in the financial markets through liquidity injections; The Bank of England (the Bank), in particular, has offered repos against a wider range of collateral than normal and has launched a scheme allowing banks to swap temporarily their high quality mortgage-backed and other securities for UK Treasury Bills.
- 1.4 This Feedback Statement (FS) contains a summary of the responses we received, as well as new internal research on investment firms in Chapter 5. Responses to Questions 1 to 4 of the DP are covered in this Overview, while the remainder is summarised in Chapters 2-4. We received 36 written responses to the DP.
- 1.5 We will not respond directly to the issues raised by stakeholders in this FS but, instead, we will develop an extensive body of work over the coming year on which we will engage regularly with our stakeholders. Where we disagree with representations made to us, we will explain in further consultation why this might be the case.

Key points

1.6 The following key points were raised in the responses to the DP:

- Respondents broadly agreed with the policy objectives set out in the DP, our current high-level standards and principles-based approach.
- There was also strong agreement on the need to continue coordinating work on liquidity both on the national level (with the other Tripartite Authorities, including the Banking Reform work) and on the international level.
- The vast majority of respondents stressed the close relationship between the central bank's role, actions and provisions and firms' internal liquidity risk management decision-making processes, as well as any measures developed by us under a new regulatory regime.
- Most respondents are reviewing their stress-testing scenarios and contingency funding plans (CFPs) in line with the lessons learnt over the past year. This includes: (i) lengthening the duration of stress scenarios and CFPs to take account of more 'chronic' stresses; (ii) adding to or increasing the severity of the scenarios; and (iii) adjusting behavioural assumptions on retail deposits, e.g. on stickiness.
- Firms are also reviewing their assumptions of what constitutes a 'liquid asset', with many agreeing that the only assets that can be considered consistently liquid now are those that are eligible at the central bank.
- Most respondents recognised the value of internal models as a framework of control and a useful reference point for monitoring and measuring liquidity risk; opinions on the role they should play in regulating liquidity were diverse.
- Most respondents agreed that the sterling stock regime, in its current form, is not as good a measure of liquidity as some of the possible alternatives. They also indicated that the mismatch regime is used already by most banks operating in the UK, who see it as positive and, if suitably refined, as a good starting point for a new regime.
- Most respondents, though, agreed that quantitative requirements are a necessary part of our liquidity regime, particularly for the short term, and agreed that we should aim for one single quantitative regime to replace the existing three. There was some scepticism, however, about usefulness of quantitative requirements to safeguard against long-term chronic liquidity stresses and the possibility of standardisation across institutions.
- Most respondents supported us working towards obtaining a clearer picture of the liquidity positions of the markets and of individual firms, with some suggesting that it would be useful if we or the Bank could make trends available publicly to allow firms to benchmark themselves against the industry. They also offered an extensive list of early warning indicators.

Next steps

- 1.7 We are running an industry standing group regularly to allow for any emerging issues on liquidity to be addressed through open and transparent discussion to aid the consultation process. To this end we will also set up a website, updated regularly, which will allow us to engage with the entire industry and stakeholders who do not participate in the standing group. It will also help us keep interested parties informed and give them the opportunity to raise any issues or concerns before we publish more work.
- 1.8 We are aiming to publish a CP in the autumn, which will set out our proposals on sound practices for managing liquidity risk with a strong focus on stress-testing. These enhanced qualitative requirements will reflect the work currently under way in the Basel Committee on Banking Supervision, due to be consulted on in July this year, and will be the centre-piece of our new liquidity policy.
- 1.9 We are also giving serious consideration, in discussion with the industry and the Bank, to the type and range of data-based requirements, which should usefully complement our critical proposals in relation to the sound risk management of liquidity.

Liquidity risk - context

- 1.10 We asked:
 - Q1: Have we established the right objectives for liquidity policy?
If not, what alternatives would you suggest?
- 1.11 There was a general consensus from respondents that, broadly, the liquidity policy objectives set out in the DP are appropriate and our intention not to operate a zero-failure regime is welcome. One respondent agreed there has been too much focus on capital adequacy in international policy work, at the expense of liquidity. Another noted that the most efficient means of holding liquidity should emerge from this consultation, which might not necessarily imply holding greater levels of liquidity across all firms.
- 1.12 Some respondents proposed additional objectives for consideration, including establishing a communication, coordination and management framework between international regulatory authorities. There was broad agreement on a need for UK authorities' own activities to be coordinated and more consistent with those of their international counterparts.
- 1.13 One response suggested that banks hold fewer liquid assets as a result of increased Basel capital requirements. Therefore, requirements to hold more liquid assets are needed to reduce the risk to the tax payer, even at the expense of reduced credit supply.

Standing facilities

1.14 We asked:

Q2: How well is the role of central bank standing facilities in banks' liquidity risk management understood? Should all UK banks be required to sign up to these facilities, or (if they do not have access) have an agreed alternative in place?

1.15 Most respondents agreed that firms that have access to central bank standing facilities understand their role well. Access to central bank facilities is also seen as valuable to acquire finance in emergency situations, as well as to engender counterparty confidence, by several respondents. A majority felt, however, these facilities are not well understood by the media and public, and the resulting stigma attached to their use could exacerbate the situation they aim to alleviate. In their current form, therefore, many believed that standing facilities had only a limited role in banks' liquidity management.

1.16 Respondents also stressed that, compared to other central bank regimes, the requirements for using the Bank's standing facility were restrictive, particularly in the range of permissible securities. Some respondents observed that it appeared easier to obtain funds from the European Central Bank (ECB) through its standing facilities. On the EU level, banks whose operating currency was euros were perceived by one respondent to have a competitive advantage in liquidity over UK firms, especially smaller banks.

1.17 Other factors that were seen to reduce the standing facilities' usefulness in their current form for banks' liquidity risk management purposes include:

- prohibitive cost of holding acceptable collateral, especially for smaller institutions;
- high margin charged relative to policy rate;
- different practices used by central banks in different countries; and
- participation threshold.

1.18 Respondents offered several suggestions that might enhance the usefulness of standing facilities for firms' liquidity risk management purposes. These include:

- a wider range of acceptable collateral, which is consistent with collateral that can be deposited with other leading central banks;
- a lower penalty rate;
- routine use by the banking sector as a whole;
- changing the facility name to something less stigmatised;
- a general education programme, aimed at market commentators and journalists to help remove the stigma associated with using the facilities;
- greater anonymity of use of the facilities by taking steps to make it more difficult to see when a bank has used them or, at least, delaying publication of information which allows identification of banks that have used them; and

- abolishing the lower threshold or, if retained, giving firms below this level the choice to opt in.
- 1.19 Respondents also offered some suggestions regarding central bank open market operations (OMOs). These include:
- augmenting the programme of term auctions, whether in the event of stress or as part of standing arrangements, rather than individual short-notice responses, to help with liquidity planning;
 - removing uncertainty with respect to the nature and timing of the use of a wider range of collateral in OMOs in times of stress; and
 - clarifying the role of central banks in maintaining normal market conditions and providing individual firms with operating liquidity and emergency funding to ensure more effective modelling of extreme stress scenarios.
- 1.20 Many respondents did not think that UK banks should be required to sign up to standing facilities. Those who did agree that all banks should be required to sign up to the standing facilities argued that the overall system would be more robust as a result, noting that this might require some institutions to alter the mix of their liquidity portfolios to ensure they are holding stock eligible for standing facility repo.

Other regulation

Banking reform work

- 1.21 We asked:
- Q3: How should the wider banking reform work influence the reform of liquidity policy?
- 1.22 Most responses discussed the role of central banks in the context of liquidity management and policy. There was a strong sense of the close relationship between the central bank's role, actions and provisions and firms' internal liquidity risk management decision-making processes (including stress-testing assumptions and CFPs), as well as any measures developed under a new regulatory regime.
- 1.23 Respondents differed in their views on how much the banking reform work would or should influence our work on liquidity, with some suggesting it did not need to change our fundamental approach. However, the need to continue coordinating our approach to liquidity policy on a national level – among the Tripartite Authorities – as well as on an international level, including parallel workstreams in the European Union (EU), the Committee of European Banking Supervisors (CEBS) and the Basel Committee on Banking Supervision (BCBS), was widely seen as a key priority in reforming liquidity policy.
- 1.24 There were some areas that many respondents felt merited special consideration in the context of the banking reform work, especially the role of depositor protection and the Bank during a liquidity crisis.

- 1.25 The new compensation arrangements and timescales under the Financial Services Compensation Scheme (FSCS), as proposed in the Tripartite Authorities' October Discussion Paper, may give retail depositors the confidence that they will ultimately get their money back. So many respondents stressed the need for liquidity policy to take account of the effects of these reforms on retail deposit behaviour, in particular that depositors may be less prone to 'run' if they are aware the scheme has been reformed to pay out promptly, and up to the full known amount.
- 1.26 Other respondents were more cautious, however, observing that while the updated depositor protection scheme might help overall confidence in the banking system, it would not necessarily dissuade customers from removing their deposits in a bank-specific event, regardless of the level of protection provided. One respondent maintained that banking reform proposals on deposit protection may introduce an additional element of uncertainty into current models if a significant change in customer behaviour results, requiring the development of stress testing for retail deposits that takes account of any such changes.

Large exposures

- 1.27 Many respondents, in their response to Question 8 and more generally, highlighted their concern about the impact of the discussions on Large Exposure limits currently held on the EU level, and their impact on intra-group funding. They noted that the combination of Large Exposure limits, legal lending limits and local withholding tax rules have restricted the free flow of funds from relatively more liquid jurisdictions to those with less liquidity, trapping liquidity within some firm entities. The management of Large Exposure limits, in particular, was observed to have increased costs as spreads between cash and government bond repo widened.
- 1.28 One respondent said that Large Exposure rules could have the potential to significantly restrict the central treasury and risk management functions within internationally-active firms, noting that imposing limits on intra-group transactions can force firms into the inter-bank market. Limits on inter-bank transactions, on the other hand, are seen to threaten the liquidity of the UK and European capital markets. It was also observed that it is important to understand that the issues of intra-group exposures and inter-bank exposures are linked and can potentially increase the risk of failure. This is because firms would have to consider more closely the speed with which the inter-bank market reacts to perceived problems at an individual entity or within the market more generally. The market addresses these risks by reducing the funds it will make available and/or increasing the cost. There is, therefore, a potentially increased risk of failure of banks and investment firms, not as a result of contagion from a large exposure loss, the primary focus of the current regulatory review, but because of the absence of liquidity.
- 1.29 The same respondent asserted that firms were planning the following changes for their liquidity risk management, in response to these proposals:
- Smaller firms would have to consider diversifying their exposures and by so doing reducing the credit quality of their counterparties. This is because the size of the funds they place will fall below the limits set by the larger, higher-credit-quality firms, which will potentially increase the risk of failure for smaller firms.

This might have implications for the amount of capital they will need to hold and therefore increase the cost of business.

- Smaller firms have indicated that the numbers of counterparties they would have to deal with would also increase significantly. Given the likelihood that they would have to deal with lower-quality counterparties, this would have implications for the amount of resource, both human and systems, required to perform the credit analysis. Introducing intra-group restrictions would also impact the subsidiaries of larger firms.
- If smaller firms are able to place funds with better-quality counterparties, it is likely they would have to do so on the basis of longer maturities, which will reduce flexibility in their own liquidity planning. This may increase the risk of liquidity problems for smaller firms.
- Restricting inter-bank funding would mean larger firms could find it more difficult to obtain the funding of the size required, so costs would likely increase as they would have to deal with more counterparties.
- Restricting inter-bank lending may also result in smaller firms finding it more difficult to access good quality collateral, increasing their risks, with the implication of increased capital.
- Combining restrictions on intra-group and inter-bank limits might increase the likelihood of firms having to turn to the central bank for funding.
- Introducing inter-bank limits would likely result in geographic concentrations and increase the risk of failure due to shocks that affect localised regions.
- The contagion principle means that liquidity issues in smaller firms would not necessarily be contained to that part of the market – they could spread more widely, causing systemic consequences. This respondent said the potentially adverse impact on smaller firms should be seen as a significant component of market-wide impact analysis by the regulators in their policy development.

1.30 Another respondent explained that international brokers and dealers often operate through multiple affiliates in different jurisdictions for sound commercial reasons. As such, they are subject to affiliate funding flows and counterparty credit risk that is typically mitigated by the parent company, with more prominent use of parent company guarantees and committed liquidity facilities under which cash can be tapped from the parent, out of its corporate liquidity stock. Developments in the Large Exposures regime may pose a challenge to group liquidity management as it may interfere with efficient risk management (particularly in times of stress) and cause liquidity to become trapped in entities. As a knock-on effect it may force liquidity out of the market, and could require costly restructuring of existing business operations. Some national discretion should be granted to permit host and home regulators to express their potential recognition of the merits of group liquidity management through appropriately tailored intra-group large exposures exemptions rules.

Market failure and cost-benefit analysis

- 1.31 We asked:
- Q4: Are there other market failures or cost benefit issues that we should consider?
- 1.32 Respondents generally agreed with the market failure analysis conducted in the DP. They also proposed other market failure and cost-benefit issues that can be considered. These include the role of the central bank in providing liquidity, the impact of the regime on London's competitive position, the consequences of a dry-up in market liquidity, and the costs of reporting and other operational considerations. Several respondents agreed on the importance of conducting comprehensive market failure and cost benefit analyses to ensure a proportionate regulatory regime for liquidity.
- 1.33 One respondent stressed that moral hazard should not result in only large banks having to self insure. Another said that, if a central bank believes it is encouraging moral hazard by bailing out a bank in trouble, it must require a bank to only hold assets on its balance sheet that are of high-enough quality to make repo-ing them to the central bank commercially and politically acceptable. Finally, one respondent observed that it did not seem reasonable to perform an isolated cost-benefit analysis (CBA) for liquidity requirements.
- 1.34 We have conducted an additional, new market failure analysis (MFA) on investment firms to supplement the MFA and CBA in DP07/7, which did not explicitly consider the specific market failures for investment firms related to liquidity risk. This MFA is in Chapter 5 of this FS.

Other issues raised by respondents - disclosure

- 1.35 Several respondents thought there was a case for debating the benefits of transparency, assessing both the possible advantages of mitigating negative market perception as well as the risk of increased transparency actually exacerbating the problem. One respondent emphasised the role of disclosure in increasing market vigilance to encourage banks to hold adequate liquidity. Rating agencies could rate banks' liquidity and outliers would have to justify their particular case. This would mitigate the risk associated with prescribing liquid asset requirements, which often result in them being treated as minima, rendering them unusable. However, another warned that liquidity disclosures needed to be approached with extreme caution, as liquidity is company specific and could be misunderstood if not considered in the proper context.

International update

- 1.36 We are committed to working with our international colleagues to deliver an appropriate level of resilience to liquidity risk. This was recognised by respondents as an important priority in updating the UK liquidity regime. There are three EU and international streams of work currently underway.

Basel Committee on Banking Supervision (BCBS)

- 1.37 The BCBS Working Group on Liquidity (WGL) was mandated by the Financial Stability Forum (FSF) to deliver an international response to the liquidity problems. After concluding the ‘intelligent stocktake’ of existing national practices, which began at the start of 2007, a revision of the BCBS’ 2000 Sound Practices Guide is almost complete and will be published for consultation by July.

Committee of European Banking Supervisors (CEBS)

- 1.38 In February 2007, the European Commission (EC) issued a two-part call for advice to the CEBS Liquidity Task Force. Following the completion of the stocktake and ‘lessons learnt’ exercise, the working group is undertaking indepth analytical work on other factors with liquidity risk implications. The final report in response to CEBS’ mandate, due in June 2008 for consultation, will contain a non-exhaustive set of recommendations for supervisors and firms, rather than principles.

Banking Supervision Committee (BSC) of the European Central Bank

- 1.39 The BSC focuses on practical issues arising from current liquidity risk management practices, including stress-testing and contingency funding plans, and is expected to complement the BCBS and CEBS work. A final report will be issued this summer.

2 Summary of responses: Lessons learned from recent events

Introduction

- 2.1 This chapter provides a summary of the responses to DP 07/7, Chapter 4 – Lessons learned from recent events.

Detailed responses

- 2.2 We asked:
- Q5: How did your liquidity planning address (i) both firm-specific and market-wide scenarios and (ii) both ‘chronic’ and ‘shock’ plausible liquidity stresses?
- 2.3 Many respondents thought their established liquidity-management, stress-testing and risk-management processes responded well to recent market conditions. Most respondents addressed both firm-specific and market-wide scenarios, as well as ‘shock’ liquidity stresses, in their liquidity planning. But few envisaged the extended ‘chronic’ stress environment that started in August 2007 and is continuing into 2008. One respondent observed that the market clearly had not expected the length of time the stress would last, or the simultaneous closure of multiple sources of liquidity.
- 2.4 In addition, several responses pointed out that a lack of central bank action for a considerable time was thought unlikely in stress scenarios, as they believed the central bank would act to maintain financial stability and orderly markets. One respondent explained that its planning had assumed the Bank and the FSA would actively maintain orderly financial markets. In the event, however, the inter-bank wholesale market stopped functioning for an extended period with no apparent market action from these bodies, according to this respondent.
- 2.5 Some respondents maintained that, in spite of failing to plan for extended liquidity stresses ahead of the current environment, established models were responsive and flexible enough to be rapidly changed to take full account of ‘chronic’ stresses. Most respondents said they would adjust their plans by extending the duration over which stresses are applied in light of recent events and make stress tests more forward looking and dynamic.

- 2.6 One respondent said that while the firm had established a significant ability to predict the behaviour of wholesale funding, it became clear during the recent turbulence that retail flows were highly unpredictable, with little correlation between gross and net outcomes, although the latter was sensitive to product line maturities.
- 2.7 Measures taken by respondents in their liquidity planning in response to the market turbulence include:
- expanding the duration over which stresses are applied to cover three-month, six-month or even one-year time horizons to reflect a more ‘chronic’ scenario;
 - expanding the number of scenarios and stresses and increasing their severity (for example, testing for a complete shut down of all wholesale funding along with a two-notch downgrade);
 - testing behavioural assumptions on assets and liabilities with respective experts to ensure that the results reflect the prevailing market sentiment;
 - running regular additional stress tests; and
 - taking on larger volumes of wholesale deposits when the potential for a full-scale market breakdown is recognised.
- 2.8 Respondents also proposed several measures we could take to facilitate firms’ liquidity planning and make stress testing more meaningful:
- analysing the Northern Rock experience to establish a benchmark for assumptions of the scale of a ‘run’; and
 - defining ‘chronic stress’ and an indication of the time period for which firms should test in a survival scenario.
- 2.9 We asked:
- Q6: How did your market-wide stress tests take account of disruptions both in the unsecured funding markets and in the secured funding markets (and both at the same time)? What were your assumptions on the correlation between short-term funding and long-term funding markets and on the effectiveness of diversification across sources of funding during a liquidity stress? Do you plan to revise your assumptions?
- 2.10 Most respondents who were active in both the secured and unsecured funding markets appeared to have stress tested for disruptions in both, looking at specific markets being unavailable. However, the severity of the events in the summer was greater than many respondents had anticipated within their stress tests. Moreover, some did not consider a scenario of extreme risk aversion and a disruption in both secured and unsecured markets at the same time or, if they did, then not for a prolonged period of time.

- 2.11 Some respondents' liquidity stress tests made no distinction between secured and unsecured funding markets and applied the same stress assumptions to all wholesale funding avenues. Moreover, many stress tests were passive in nature, so testing of different sectors of the wholesale markets was often not undertaken. As a result, most respondents stated that they were reviewing their stress assumptions. For example, the scenarios developed during the turbulence by one respondent assume that no wholesale funding is available in any form – effectively ensuring a correlation of one. These are extreme scenarios and therefore offer a high level of conservatism.
- 2.12 Several respondents stated that their funding policy maintains wide diversification by currency, geography, provider, product and term which, together with the depth of counterparty relationships, meant that liquidity demands were successfully managed within overall funding requirements despite the concurrent disruptions.
- 2.13 The disruptions across all markets were of varying degrees. The unsecured market outside the UK was more difficult than the domestic or secured markets; the closure of the EMTN markets was also unexpected for some respondents. However, diversification did help with repo lines being established before the market crisis. Experiences suggested that access to longer-term funding in the capital markets could not be relied on – even for secured funding such as covered bonds – and might only be available at a penal cost (e.g. through private placements).
- 2.14 Measures taken in liquidity planning by respondents in reaction to the ongoing market turbulence include:
- modelling stress events in both the secured and unsecured markets, as well as chronic scenarios, reflecting recent market conditions;
 - making stress assumptions more granular, taking different market characteristics into account;
 - considering funding concentration limits to mitigate the risk of concentration on specific sectors for new funding;
 - ensuring that liquidity is managed not just by the treasury but on a group level;
 - changing assumptions on the ability to finance certain assets and the time to liquidate other assets (in particular, the ability to finance certain asset-backed securities was adjusted to reflect market conditions);
 - setting structural measures restricting the level of wholesale borrowing and the reliance on cross-currency funding;
 - reviewing the assumptions on the level of access to repo financing markets; and
 - launching an economic review of businesses requiring unsecured funding, with a view of becoming more flexible and selective in the use of the balance sheet, including scaling down some business models.

2.15 We asked:

Q7: How far were contingent exposures arising from both on balance sheet and off-balance sheet activities incorporated into your liquidity planning? How did your behavioural and correlation assumptions compare with recent events? How will you revise your assumptions?

- 2.16 Contingent exposures arising from both on-balance-sheet and off-balance-sheet activities were fully incorporated into many respondents' liquidity planning. Several found that the underlying assumptions adopted in their stress tests held up well and were often more conservative than actually observed. For example, one respondent reported that there were no calls on the committed standby facilities and cash calls under derivative contracts did not exceed stress-test assumptions.
- 2.17 Those respondents who did identify disparities between their stress-test assumptions and their actual experiences during the recent market turbulence are adjusting them accordingly, even in cases where the actual impact of the crisis on these commitments was less than reflected in the stress testing. For example, the changes seen by one respondent in the current crisis were in commitment line utilisation, liquidity provision to its ABCP programme and the use of FX swaps to fund non-domestic currencies. The magnitude of the changes seen was within those assumed in stress-test scenarios, however, as the cash outflow to the ABCP programme was faster than assumed, it said it would revise its estimations on this point.
- 2.18 Specific contingent exposures incorporated into respondents' liquidity planning included mortgage lending commitments (where an unexpected consequence has been some reduction in the level of mortgage redemptions), lending pipelines, leverage finance and money market funds, contractual flows under derivative contracts, liquidity lines written to support business such as ABCP back up lines and wholesale corporate facilities, and in-house conduits. Contingent liabilities related to retail products were seen as immaterial in the context of the liquidity stress test by one respondent. However, several others disagreed, noting that mortgage lending commitments were an important part of their contingent exposures.
- 2.19 Among the measures respondents took for their contingent exposures were reviews of their stress scenarios. These include:
- introducing a new CDO-specific scenario, assuming the timed unwinding of SPVs, and the modelling of associated collateral calls and funding events based on repo-ability of residual assets;
 - reviewing potential triggers and funding implications for CDO stress;
 - designing a separate standalone stress scenario to include the potential impact of mono-line insurers failing; and
 - strengthening stresses to include a 100% call on all committed-lending facilities, an assumption that a firm would be unable to borrow against facilities granted to it and full support for a firm's ABCP conduit.

2.20 Other measures taken by firms include:

- further analysis of retail contingent liabilities;
- considering consequences to hedge effectiveness and implications for the municipal bond market;
- increasing target liquidity for contingent exposures to mortgage offers to cover four instead of three months of lending and to cover a 'run' on savings similar to that experienced in the wake of the Northern Rock failure;
- restructuring major sponsored conduits to allow assets to be used in the repo markets;
- incorporating contingent exposures arising from systemic stress, such as Leverage Finance and Money Market Funds;
- modifying the expected duration of the funding once a pipeline deal closes on the balance sheet in the CFP, delaying monetisation to 270 days, out from 180 days; and
- incorporating contingent exposures related to municipal bonds, the commercial real estate pipeline and expected securitisations for pipeline deals in the CFP.

2.21 We asked:

Q8: To what extent have constraints in cross-border liquidity (e.g. trapped pools of liquidity, time zone differences, freezing of FX swap markets) and regulation (e.g. large exposure limits on intra-group lending and other rules and legal restrictions) impacted on your liquidity management during the market turmoil?

2.22 Even though respondents reported an increase in pricing in the FX swap markets during the disruption, most observed that the FX swap market had continued to function, so did not impact their liquidity risk management. Generally, respondents observed a reduction in foreign currency funding availability in both value and term. Some were planning to update stress scenarios to address potential future disruptions in the FX market or running cashflow projections in the major currencies to ensure any risk of this nature is recognised and managed. Many respondents elaborated on Large Exposure rules, which are discussed in Chapter 1.

2.23 One respondent explained that regulatory constraints and differences in infrastructure, banking book focus and bank governance issues continued to limit firms' ability to deploy liquidity evenly within a financial group and achieve optimisation of funding. Another maintained, however, that it had been successful in working with host regulators to navigate large exposure constraints by offering host regulators parent company guarantees and greater transparency to group risk, as appropriate or necessary. This was facilitated by regular information sharing between home and host regulators.

2.24 Several international respondents noted that operating a centralised liquidity management system meant that constraints in cross-border liquidity and regulation did not have a material impact on liquidity management during the market turbulence. Also, they were not reliant on single currency funding of multi currency assets via the swap markets. Others require each entity globally to be self-sufficient in

terms of liquidity needs and comply with their own liquidity limits. As such they recognise in their liquidity risk management framework that there have always been restrictions on the ability to move funds between legal entities within a group.

- 2.25 Respondents proposed several measures that international regulators could take to address some of the issues they had raised:
- consider the potential impact of regulations on cross-border liquidity to avoid restricting the flow of cash around an integrated banking group;
 - dissuade offshore regulators from actions that may result in subsidiaries seeking to place money away from the parent, which could cause liquidity stress;
 - acknowledge the value of group liquidity management for firms with offshore parents that centrally source and manage liquidity for the benefit of the group; and
 - recognise international group liquidity management and the resulting need of liquidity requirements not to be set at a subsidiary level to avoid restricting intra-group liquidity and trapping liquidity.
- 2.26 Some respondents stressed the need for a thorough debate on the principles on which a workable liquidity regime can be created for firms managing liquidity risk on a group basis. So we were urged to give careful thought before imposing requirements on individual entities within wider groups, especially where the parent company, from whom they obtain funding, is located outside the UK.
- 2.27 We asked:
- Q9: In light of recent events, how would you improve the stress testing for retail deposits, including the behavioural assumptions used in stress scenarios?
- 2.28 Recent events suggested that stress testing for retail deposits should become more granular, paying attention to the deposit product, pricing structure, balance size and channel and customer type from which deposits were received. Responses indicated the existence of penalties for withdrawal of funds acted as less of a barrier to withdrawal under stressed conditions than perhaps was expected.
- 2.29 Respondents concluded that the growth of the internet has increased the speed at which certain retail deposits may be lost if a firm-specific stress arises. Accounts with larger and more volatile balances tend to be less sticky. Many firms with large retail deposits are therefore in the process of developing enhanced behavioural assumptions in the stress testing of deposits.
- 2.30 One respondent's liquidity stress test, for example, already segments the retail deposit book into instant access accounts (with and without interest penalty), fixed-term bonds, other accounts and fixed-term bond maturities. Different assumptions are made in relation to outflow in stress conditions based on the type of account, past experience and ease of access for the customer. In future, it plans to introduce greater segmentation into its behavioural analysis by:
- large deposits (over £35K);

- deposits from customers whose wealth is managed by others on their behalf;
 - non-branch based accounts (internet, phone/post); and
 - ISA balances.
- 2.31 Several respondents reported inflows in retail deposits since August 2007 due to a ‘flight to quality’ effect. One stressed, however, that it did not consider it prudent to assume inflows of retail deposits during any subsequent market-wide stress.
- 2.32 Measures taken by respondents in reaction to the ongoing market turbulence include:
- enhancing assumptions for retail scenarios to incorporate lessons from the Northern Rock collapse, also reflecting the increased competition for retail funds;
 - reviewing concentration risk in the high-net-worth market, where local deposit protection schemes were deemed to have little value in retaining client deposits; and
 - testing retail certificate of deposit market for both depth and ability to issue during stressed market conditions.
- 2.33 Several respondents proposed that we could use the information we have on the Northern Rock experience to develop metrics for the market to guide liquidity modelling.
- 2.34 We asked:
- Q10: How severe was your firm’s experience of the market turmoil?
Describe how your firm was exposed to a drying up of
interbank funding and a flight to quality.
- 2.35 Overall, respondents reported a decrease in term and an increase in costs in the interbank funding markets during the recent market turbulence. While wholesale funding was usually still obtainable through the short-term money markets, long-term funding liquidity in euros, British pounds and American dollars was and continues to be more difficult to source. The result is a shortening of duration of wholesale funding. Even those firms that did not experience major problems raising cash did find interbank funding more expensive as confidence in the interbank market reduced. One respondent reported that there have been significant pricing implications with a rise in both the retail and wholesale cost of funds.
- 2.36 Mortgage lenders found it more difficult to access overseas funding following the Northern Rock crisis as overseas investors became concerned about the potential similarities between the UK and US mortgage markets, and the funding profiles of some UK lenders.
- 2.37 One respondent reported that overseas investors appeared to have inferred a level of riskiness in UK banking from the Bank’s perceived lack of support, which has undermined banks’ efforts to attract funding. The level of severity of the funding difficulties fluctuated over time with changes in market sentiment and actions taken by central banks. Following the announcement of concerted intervention by the central banks, greater confidence returned to the market.

- 2.38 In spite of the widely-felt disruptions in the interbank funding markets, many respondents reported that liquidity demands were successfully managed within overall funding requirements. A number of factors was seen to contribute to a firm's ability to manage the recent market constraints, including diversification of funding, depth and diversity of key counterparty relationships, regular access to a wide range of funding, limited reliance on wholesale and interbank funding ahead of the market turbulences, and a high level of liquidity to start with.
- 2.39 Several firms, especially larger entities, benefited from 'flight to quality' through significant increases in the inflows of retail deposits, increased credit lines from counterparties, increased enquiries from counterparties with whom they previously did not have a regular deposit taking relationship, and increased client flows. One respondent noted there was also a parallel, markedly increased level of competition in the retail deposits markets. Another observed that the 'flight to quality' has led to higher prevailing rates and therefore higher borrowing costs for firms that were not beneficiaries of it.
- 2.40 Measures taken by respondents in reaction to the ongoing market turbulence include:
- more careful coordination of liquidity flows and more regular communication across businesses of the liquidity position;
 - abandoning public wholesale issuance plans in favour of secured private placements;
 - using long-standing banking relationships to arrange bi-lateral lending facilities to replace the defunct unsecured inter-bank market;
 - continuing policy of not overpaying for funds compared with its peer group; and
 - greater reliance on the repo markets.
- 2.41 We asked:
- Q11: In what ways do you think stress testing – including the assumptions used to build stress scenarios - could be strengthened in light of recent events? How has the output from your stress testing informed and challenged your ongoing liquidity management? Please provide some examples.
- 2.42 Most respondents reported that they were reviewing their stress scenarios. There was broad agreement that stress testing needs to be more granular, for example, by considering the characteristics of individual instruments, and must also take greater account of potential 'chronic' stresses. Additionally, firms are considering new market-wide scenarios, which build upon the recent disruptions in the wholesale markets.
- 2.43 One respondent warned, however, that to be useful, stress testing had to utilise realistic scenarios and give a general view of the liquidity position of the firm. As actual events will always either be unanticipated or have unanticipated consequences, there is a danger that stress testing is seen as a panacea for liquidity management rather than as one factor in management decisions. And, despite the pivotal role of stress testing in mitigating and planning for liquidity risk, many respondents

emphasised the limitations of firms being able to stress test and plan for extreme market-wide liquidity stress events. One respondent in particular underlined the limitations of stress testing in anticipating future liquidity risk events and thought that their actual usefulness laid more in identifying particular vulnerabilities and the correlations between them.

- 2.44 Most respondents agreed that scenario testing needed to become a more dynamic tool. Recent events have shown that stress testing assumptions could be improved by determining the level of stress on the cashflow by the characteristics of individual instruments (e.g. liquidity in the US Commercial Paper market dried up almost immediately while other markets were more resilient) and temporal considerations. Layering and risk progression introduce significant dimensions in liquidity risk, according to one respondent, who added that especially when macro-economic elements are at play, significant second- and third-order effects need to be considered. Market-wide events can affect specific companies in different ways and company-specific events may give rise to systemic issues.
- 2.45 To properly understand where risk correlations exist, and adjust their assumptions about liquidity values accordingly, respondents suggested that firms need to reassess the valuation, classification and liquidity value of marketable assets. One respondent explained that it has revisited the correlation of funding markets, particularly to enhance the interrelationship of money-market and price-competitive retail funding to take greater account of iterative liquidity management strategies adopted in practice.
- 2.46 There was also strong agreement that stress testing needs to take greater account of 'chronic' stresses than traditionally modelled. The on-going nature of the current market conditions has led many firms to lengthen the horizon of their stress scenarios (e.g. to include three-month and six-month periods), allowing a firm to withstand severely stressed conditions for long enough to adapt its business model or seek alternative solutions.
- 2.47 One respondent suggested that individual firms' stress testing would be better informed if the central banks, and the Bank in particular, were to clearly set out the actions that they would take in situations of liquidity stress. Central banks should also perform stress tests and the results, including assumed actions, should be available, keeping in mind that communicating such results would need to be done with care. One respondent warned that if all firms react in a similar way in a market-wide shock, the actions of each firm would undermine the effectiveness of the measures taken by others. The Tripartite Authorities should review their plans in the event of such potentially systemic consequences, including a review of the possibility of coordinated action by the authorities in major financial centres worldwide.
- 2.48 Other measures taken by respondents in reaction to the market turbulence include:
- reviewing assessment of ABCP conduits and total return swaps;
 - discounting contingent funding sources unless all necessary agreements and systems are in place and used regularly;
 - revisiting role of liquidity insurance in liquidity planning;

- considering investing in more sophisticated, automated proprietary liquidity risk modelling and reporting;
- considering impact/responses to extreme ‘Black Swan’ scenarios (i.e. complete drying up of liquidity for ABS, extreme widening of interbank market spreads);
- considering a true distribution of daily events, based on a long-term maturity mismatch approach;
- considering the impact of reduced competition, resulting in lower redemptions, lower corporate asset sales in the secondary markets and increased take-up of offers;
- reviewing stress scenario assumptions for prime brokerage business to ensure they adequately reflect client behaviour based on most up-to-date market conditions;
- considering the enhanced role of the internet in attracting and managing retail deposits; and
- adopting a base-case stress scenario, based on modelled company-specific and market-wide stress tests.

2.49 We asked:

Q12: To what extent have your ‘treasury assets’ been affected by the liquidity freeze in the asset markets? What assets, in your opinion, can be considered consistently liquid?

2.50 Firms’ treasury assets were affected in different ways by the liquidity freeze, depending on their funding approaches. Most respondents reported a fall in market value of treasury assets due to the large widening of credit spreads (e.g. Eurobond, FRN, RMBS holdings). At the same time, the market for these types of asset tightened significantly, making it extremely difficult to obtain liquidity through their sale.

2.51 The most reliable market throughout the liquidity crisis was seen to be the repo market by some respondents, where banks continued to provide liquidity secured against high-quality collateral (subject to haircuts of around 5%). At the same time, a considerable reduction in collateral acceptable to the repo market and some shortening of maturities in repo financing as term liquidity dried was reported. Government securities and high-grade financial instruments were most favoured, while triple ‘A’ RMBS were less favoured by most repo counterparts, principally owing to concentration risk, with many market participants offering similar collateral. The correlation risk of RMBS with the mortgage lending counterparts was also a factor. One respondent continuously monitored the firm’s ability to finance in the repo market and implemented tight controls on repo trading activity to ensure that there was a ready source of available collateralised funding at all times.

2.52 The more heavily structured treasury assets in respondents’ investment portfolios (for example, SIV capital notes, CDOs of ABS, CLOs etc.) were the worst affected, with significant write-downs in market value and no market liquidity other than at very distressed valuations. A limited number of assets had defaulted, reported one respondent, while others were credit impaired or subject to lower valuations due to severe credit spread widening in these asset classes. Some banks refused to make market

prices in structured assets as their balance sheets became closed to this type of asset, particularly as year-end approached. One respondent concluded that most debt issued by a conduit or SIV, most complex structured products and, generally, any asset in which there is no regular two-way market may now be considered relatively illiquid.

- 2.53 One respondent noted that the sterling money markets became significantly more liquid once the Bank loosened its OMO eligibility criteria to include high-quality RMBS holdings. Since the effect of the liquidity freeze rendered most highly-rated financial assets illiquid unless they were also eligible for repo transactions with the central bank, the Bank can provide practical support, by extending the collateral list for OMOs to include this class of assets, with the appropriate level of ‘haircuts’.
- 2.54 Also, several respondents reported that during the current crisis some firms have looked to other central banks to source funding. But for firms without access to the ECB certain assets were far less liquid than would be the case with ECB access, one respondent observed.
- 2.55 The recent turbulence prompted several respondents to review their definitions of liquid assets. Most respondents agreed that in considering the liquidity value of assets one criterion of great importance was whether the assets concerned were eligible as collateral at central banks’ standing facilities to which a firm had access. One respondent disagreed, however, saying that central bank eligibility alone was not a factor that should be largely considered.
- 2.56 Another respondent reported a significant dislocation in the market as to what constituted acceptable or liquid collateral, so concluded that considering what assets were consistently liquid would depend on the views of its counterparties, which can vary from time to time. Respondents also said that distinctions between liquid and illiquid assets were only relevant under the respective stress scenarios that a firm wants to manage. Illiquidity may be a function of wider haircuts or limited availability to refinancing markets. Another dimension, particularly for unencumbered trading book assets, was the ability to monetise such assets even if they were deemed liquid, subject to manageable stressed haircuts and market/repo access. Firms with active repo activity had more ability to monetise certain assets than those who hold them passively as treasury assets.
- 2.57 Most respondents concluded that only sovereign debt and assets with the shortest maturities could be considered consistently liquid under stressed conditions. One specified that AAA rated central bank, government, sovereign or supranational debt can be considered consistently liquid, especially if eligible at the central bank. Short dated securities with at least AA rating (for example, CDs up to three months) may also be considered liquid. Other securities, including FRN, CB and ABS, may be considered liquid, insofar as they are repo-able at ECB, Fed or other central banks by those who have direct access, this respondent explained.
- 2.58 Respondents warned that if our new liquidity framework intends to categorise assets, it also needs to offer consistency and avoid artificial and inappropriate segmentation. Categorising assets as appropriate liquidity stock also needs to be in line with the market liquidity stress scenario for which they are to act as liquidity insurance, according to another firm. And assumed asset liquidity may depend on central banks’

readiness to support liquidity in those markets and eligibility for central bank standing facility access. There was also a need for consistency between definitions of high-quality liquid assets among the prudential regime for banks and building societies and the collateral accepted by the central bank.

2.59 We asked:

Q13: In your experience, what has been the role of liquidity promises and liquidity facilities in your liquidity management during the recent market-wide liquidity stress? How well did liquidity promises perform when and if called upon and did 'committed' lenders invoke material adverse change or market disruption clauses to refuse lending?

2.60 Several respondents noted that they do not use liquidity promises from third parties as part of their liquidity management process, relying instead on long-established relationships to ensure liquidity in times of stress. One explained that it considers them suitable only for smaller banks, while another said that committed facilities are not held as the firm believes them to be negated by the 'material adverse change' clause. Many viewed such standby 'liquidity insurance' as unreliable in stressed circumstances.

2.61 Most of those who did have such facilities in place did not draw down on them as they were seen as the last line of defence for a firm; any calling of such funds risked making the situation worse due to the markets becoming aware that the funds have been called. However, it was noted that even though they had not been drawn down, many firms anticipated no problem in using them.

2.62 Facilities were considered valuable only if they were used regularly. Internally, committed facilities have become more commonplace in formalising the parent's commitment to fund a subsidiary, whether as part of a centralised funding model, or to offer contingent financing above any stress events locally provided for.

2.63 We asked:

Q14: Which of the courses of action contained in your contingency funding plans have been more useful in ensuring enough liquidity to remain operational? At what point and for what reason did you activate your contingency funding plans?

2.64 Strong counterparty relationships, allowing firms speedy access to diverse sources of funding during the recent market turbulences, was widely seen as a vital element within liquidity management and a key underpin to successful CFPs. One respondent explained, for example, that an established securitisation infrastructure and strong counterparty relationships meant that private placement/repo remained viable despite closure of public markets. Another respondent held discussions with key relationship banks early in the crisis to ascertain the amount and terms of funding that could be available in the event of a further deterioration in market conditions.

2.65 Diversification of funding was seen as another key component in ensuring enough liquidity. One respondent's funding activities included use of repo markets (including via OMO), opening up of new markets and currencies for wholesale funding, and

focusing on structured and innovative transactions. Another explored the scope for private placements of secured debt (i.e. covered bonds) if the primary markets failed to return in 2008.

- 2.66 Several respondents took steps to grow retail deposits and contract retail lending, which they saw as fundamental in supporting all other contingency activity. They reviewed retail product offerings and adjusted terms/pricing to reflect appetite for new business in the prevailing market conditions and to ensure that offerings were not out of line with competitors (i.e. rates too low risked retail savings outflow while rates too high risked sending a distress signal).
- 2.67 Effective internal and external communication and strong governance processes were also deemed crucial. One respondent noted that a key component of its CFP is communication with major depositors and debt investors and coordination, communication and provision of management information internally. Another stressed that identifying the individuals internally who are responsible for executing the CFP was the key to its success. One respondent decided to underpin investor confidence by agreeing to buy back previous debt issues where the holders were seeking to exit or reduce their exposure. Most firms' management teams started meeting more regularly – weekly or even daily – to discuss impact and required courses of actions from the ongoing turbulence and review liquidity position. One respondent stressed that the availability of intra-group funding proved to be the most useful specific aspect of its CFPs as the most accessible, flexible and private source of contingency funding.
- 2.68 One respondent said that it had deliberately drafted the CFP in a format to allow the crisis management team the most flexibility in managing stressed situations. This allowed it to pursue a variety of funding options without being obliged to follow a prescribed course of action, which would not have been useful as the move to risk aversion had been more extreme than it could have envisaged beforehand.
- 2.69 Other measures taken by respondents in reaction to the market turbulence include:
- FX swap funding;
 - decreased inter-bank lending;
 - delayed new investment in treasury assets;
 - immediate increase of funds transfer pricing (FTP), and communication thereof, to provide correct incentives to businesses not to build up unprofitable positions;
 - systematic identification of risks specific to this market environment; and
 - mortgage criteria and pricing review to slow down new mortgage lending commitments to a level where they had enough resources to continue lending.
- 2.70 We asked:
- Q15: In what ways do you think contingency funding plans could be strengthened in light of recent events? Do you think that a necessary component of a contingency funding plan is to have access to central bank's standing facilities?

- 2.71 A vast majority of respondents focused heavily on the role of the central bank in their comments on this question. Many banks thought that it would make it easier for them to develop realistic and effective contingency plans if the Bank reviewed its standing lending facilities and the pool of eligible collateral. Acceptance of a broader range of collateral – subject to the appropriate haircuts – as adopted by the ECB, for example, would mitigate potential collateral shortages and higher costs. Harmonising the collateral rules by the major central banks, as well as clarity and consistency on common standards and haircuts, would establish a level playing field across jurisdictions, allowing market participants to plan their collateral requirements with a greater deal of certainty, and mitigate systemic risk.
- 2.72 Respondents raised the following additional points:
- a better understanding of how the central bank and regulator would handle any future crisis would be an advantage;
 - access to a central bank’s standing facility is especially important where the currency in question is not the mother currency of a bank;
 - in a shock scenario, it is preferable to have access to central bank facilities for value today funds, because of time limit considerations; and
 - access to central bank OMOs is influential in determining which asset classes might remain liquid under stressed market conditions, beneficial in providing a benchmark for assumptions regarding haircut, and reassuring in providing a committed facility which is not subject to risks of contagion with the firm’s liquidity difficulties.
- 2.73 Several respondents noted that even though in principle no bank should rely on central bank funding over and above the normal course of business, in a systemic crisis it should be recognised that central banks are part of the system and as such should work with other members of the system to minimise the impact of the crisis. In particular, the central bank should control systemic events that might impair monetisation. It was also suggested that central banks should stand ready to facilitate the efficient functioning of FX markets.
- 2.74 Respondents also provided specific examples of how they are planning to strengthen CFP arrangements in light of recent events. For example, given the length and breadth of the current market events, the time horizon of a CFP and the combination of different stress scenarios, as well as the degree of stress experienced within certain segments of the market, are areas that should be considered.
- 2.75 It was also pointed out that wholesale funding in the future would likely shift towards secured and away from unsecured channels. Banks’ assets, such as high-quality mortgages, would be increasingly used as security against strategic or medium-term funding and in the repo market. Off the back of this, bank-to-bank standby facilities in the form of committed repo facilities should develop further as a contingency funding product, according to one respondent.
- 2.76 Other issues that could be considered in a CFP, and more generally, include:

- testing CFPs by walk-through tests and simulation exercises and testing CFP backup-funding sources for genuine availability, ideally by accessing that funding;
- considering inter-company funding complexity that accompanies many business activities and that can cause liquidity and capital to get trapped;
- including all aspects of funding and potential sources of funds and assess whether they can reasonably be accessed in times of stress;
- understanding off-balance sheet exposures of all kinds;
- identifying assets outside the firm's primary liquidity pool as possible back-up sources of contingent liquidity;
- identifying sources of liquidity outflows and the level of control the firm has over the outflows; identifying and maximising the sources of liquidity inflows;
- diversifying funding sources into new geographies once things settle down;
- ensuring an adequate level of matched funding and ready cash;
- expanding CFPs to include market-wide stress, if necessary;
- involving a wider range of people/roles in the plans and being more specific in the actions that might be taken in a particular scenario;
- including frequent interactions with regulators and central banks;
- introducing temporarily higher levels of eight-day liquidity, as a percentage of SDL, and lower operational funding limit ratios;
- revising CFP aspects relating to customer behaviour in stressed conditions and the management of reputation risk;
- avoiding being too 'situation specific', but instead focussing on the general principles of responding to any major funding crisis;
- identifying and regularly testing liquidity mitigants (to establish implementation timescales and effectiveness);
- strengthening the link between stress testing and the CFP; and
- ensuring it is a group-wide plan rather than just sitting within the treasury; ensuring all areas of the group are aware of the potential actions they may have to take.

3 Summary of responses: Review of existing regimes

Introduction

- 3.1 This chapter provides a summary of the responses to DP07/7, Chapter 5 – Review of existing regimes.

Detailed responses

- 3.2 We asked:

Q16: What other comments would you like to make on the operations of the sterling stock regime? How could the regime be refined if it were to continue?

- 3.3 Responses indicated a broad consensus that the sterling stock regime, in its present form, is not as good a measure of liquidity as some of the possible alternatives, and is detached from firms' liquidity management practices. Most respondents agreed with the limitations identified in the DP.
- 3.4 A variety of issues relating to the sterling stock regime were raised. Several respondents noted that measuring liquidity over a cumulative five-day period only is not robust enough and the current regime ignores off-balance-sheet liabilities and other currencies. The use of CDs to offset wholesale sterling liabilities and the assumption that these instruments can be liquidated in a stress situation has been called into question by some respondents. Similarly, some respondents see the requirement to hold liquid assets to cover 5% of sterling retail deposits as arbitrary and propose a more rigorous modelling of retail outflows. A few respondents stressed that the list of collateral is very restrictive and may lead to a shortage of such securities.
- 3.5 One respondent considered the sterling stock regime a hindrance and suggested that the extent and complexity of contingent obligations, cross-currency transactions and repo transactions give rise to anomalies and contradictions in looking at the results of the sterling stock return. Another respondent observed that the sterling stock regime is prone to overstate a firm's liquidity condition if there is an imbalance of stock held to cash needed and the market is not operating properly.

- 3.6 Some respondents recognised the value of holding ‘treasury assets’ to cover short-term outflows but indicated that the sterling stock regime should overcome the limitations identified in the regime before becoming a useful tool to determine minimum liquidity levels. One investment firm suggested the composition and effectiveness of any pool of liquid assets will depend on the institution’s access to its refinancing markets, access to central banks and the preparedness of central banks to offer systemic support to the respective treasury asset markets. Other liquidity insurance may also have to be considered within a group context.
- 3.7 Others proposed that the current sterling stock regime be replaced by a quantitative measure based on the mismatch regime. Another common proposal was to replace the regime with the ability to pass a robust test as this would better measure a bank’s overall liquidity position. One respondent believed that it should be replaced by a single quantitative regime adopting a Basel II-style standardised/advanced approach that would provide the necessary flexibility to accommodate the differences between banks’ business models.
- 3.8 Those building societies that responded to this question emphasised the need to carefully consider the introduction of the sterling stock regime on a wider basis. This is because increasing the compulsory holding of central bank securities significantly may influence the price of such securities and put at a disadvantage those banks having to purchase eligible collateral for their portfolios. One bank pointed out that any reform of the sterling stock regime, and in particular the ability to offset sterling liabilities with CDs, could have a major impact on the sterling CD market.
- 3.9 We asked:
- Q17: What is your experience of applying the mismatch regime?
How well does it address core liquidity risk? In what ways could it be improved?
- 3.10 Responses indicated that a mismatch approach is already used internally by most banks operating in the UK and is also the approach used by sterling stock banks and some building societies. There are some investment firms that agree with a mismatch regime for investment firms on the basis that internal models may be used and that the regime is primarily for reporting. Overall, respondents’ experience of applying the mismatch regime is positive.
- 3.11 Several respondents proposed ways in which the mismatch regime could be improved. A frequently-raised issue was the need to make the regime more granular (not only covering one week and one month, but the periods in between) and to extend it. The current eight day and one month mismatch limits are seen as too short term to assess core liquidity and there is a risk that there is too little time to execute contingency plans. One respondent suggested extending the liquidity framework to at least three months. Another recommended we extend the model up to 12 months – not necessarily to ensure all gaps are covered under every scenario – but to ensure that senior management are aware of all the risks within the balance sheet from a liquidity perspective. Introducing softer limits and a qualitative review based on senior management responsibility are some ideas proposed for the more extended time buckets.

3.12 Several respondents would welcome the ability to propose internal model assumptions and use their own behavioural overlays either under normal or stress conditions. A respondent put forward the idea that for those banks that did not wish to use internally-generated liquidity models a ‘standardised’ approach would be appropriate.

3.13 Other areas in which the mismatch regime could be improved include:

- identification of haircuts;
- monitoring of positions in material currencies;
- increased recognition of liquidity support from some institutions’ head office;
- application of gradual weighting of liabilities rolling in, rather than ‘digital’ moves;
- consideration of contingent liabilities; and
- possibility of delays in settlement of sales of marketable assets.

3.14 We asked:

Q18: How successful, in your experience, is the building society regime regulating societies?

3.15 Generally, building societies felt the regime has served societies and their stakeholders well for many years. A few societies noted the regime seems to be effective as the building societies sector has withstood the credit crisis. One observed that the present regime is adequate in orderly markets, but in the current difficult markets a mismatch regime could be more robust. In contrast, another argued there is no evidence that the regime plays an active role in regulating societies’ actual approach to liquidity risk management. This same society pointed out the regime allows societies to hold relatively large volumes of each other’s debt – which may not be helpful in an extended stress period.

3.16 It would appear from some of the responses that building societies’ liquidity policies tend to include limits and safeguards over and above the regulatory minimums and to hold levels of prudential liquidity well above that formally required by us. The minimum ratio required for eight-day liquidity – currently 3.5% of funding liabilities – is considered by several respondents as too low for internal purposes.

3.17 A frequently-expressed concern relates to the types of liquid assets permitted to be held within the prudential liabilities portfolio (e.g. ‘AAA’ UK RMBS), where the recent market has proved to be less liquid than previously thought. As noted by several respondents, the list of suitable asset types for liquidity portfolio does not, unlike other regimes, require a minimum holding of central bank eligible collateral. As a consequence, the regime gives societies little or no incentive to hold Bank-eligible collateral since higher-yielding but relatively illiquid mortgage-backed securities may be treated as the equivalent of OMO eligible sovereign debt. Some respondents claimed this may have put societies at a disadvantage in recent times as (i) they have not considered it necessary to participate in the central banks’ standing facilities and OMOs; and (ii) there is an expectation that they may now be required to hold OMO securities and be forced to buy them at inflated prices.

- 3.18 One society said that the current regulatory reporting regime does not highlight the mismatch within the balance sheet. Another underlined that it is not possible to manage liquidity separately from funding (specifically funding maturity concentration) and that modelling using a cash-flow ladder will provide a more appropriate measure of liquidity requirements.

4 Summary of responses: A more principles-based way forward and Supervisory information

Introduction

- 4.1 This chapter provides a summary of the responses to DP07/7, Chapter 6 – A more principles-based way forward and Chapter 7 – Supervisory information.

Detailed responses

- 4.2 We asked:

Q19: How effective do you think our high-level standards are?
Do they make sufficiently clear that liquidity remains the
responsibility of the bank and its board/senior management?

- 4.3 Most respondents agreed that our high-level standards are effective and make sufficiently clear that liquidity remains the responsibility of the bank and its board or senior management. Several respondents commended our commitment to more principles-based regulation and supported our proposals to strengthen qualitative standards. One firm, however, noted that Northern Rock shows that high-level standards are ineffective.
- 4.4 A commonly held view was that the effectiveness of our high-level standards depends on our interaction with financial institutions in the form of challenges to liquidity assumptions, business models and risk tolerance decisions. In this same context, some respondents called for a better understanding by the authorities of how high-level principles are translated into practice by each firm, given a firm's particular circumstances (particularly when looking at investment banking activity). One respondent proposed we should ensure that staff in key positions of management and control are properly trained and can demonstrate enough experience. Another advocated for greater emphasis within high-level standards to ensure that firms' senior management have a ready, adequate and actionable liquidity strategy in place to execute whenever they judge fit.
- 4.5 Some respondents asked for a clearer definition of 'adequate' in the context of amount and quality of liquidity resources and 'significant' in terms of the level of risk acceptable that liabilities cannot be met. This guidance should ensure conformity throughout the financial sector but with enough flexibility to reflect the differing nature of business models. Several respondents thought it would be useful if we

published as much informal guidance as possible on high-level standards, and on the principles-based approach to liquidity management more generally.

- 4.6 In contrast, some other respondents recognised that what is deemed ‘adequate’ in liquidity terms may be a matter for different firms’ judgement, subject to minimal quality safeguards by regulators. So further exploration of the term ‘adequate’ is not beneficial as different firms have different types of susceptibilities to liquidity stresses and may, for instance, have different expectations about how emergency liquidity assistance might be deployed by the authorities in their case.
- 4.7 One respondent raised the issue of ‘moral hazard’ in connection with the board/senior management’s responsibility for liquidity risk management. It proposed that institutions be rewarded for their prudence or, more importantly, reckless institutions be made to pay for management failures.
- 4.8 We asked:
- Q20: What are your views on the correct risk appetite? Should the same 1 in 200 one-year risk appetite that applies for capital also be applied to liquidity, if necessary converted to the equivalent for a shorter time horizon?
- 4.9 Many respondents agreed it would be uneconomic to run a zero-failure regime as no amount of liquidity could cover all eventualities for firms carrying out maturity transformation. At the same time, some respondents felt that a 1 in 200 one-year risk appetite for liquidity risk would be too high and the risk appetite set should ensure firms’ ability to withstand a combination of firm-specific and market-wide scenarios and not be based on probabilistic measures and added capital requirements.
- 4.10 Several respondents advised of the difficulties of allocating probability to liquidity events and of using a statistical confidence-interval-based approach (such as for capital adequacy), including stochastic modelling, for liquidity. A few noted that liquidity risk should be measured to a shorter time horizon – without assuming the probability of default in a quarter is independent of the next. Similarly, as some firms observed, probability of default with respect to liquidity risk is also a function of other support factors, such as the deposit protection scheme and central bank support. Several respondents drew our attention to the fact that it would be very difficult to determine the potential characteristic of those liquidity events and that idiosyncratic factors and behavioural issues play a big role in liquidity risk.
- 4.11 One respondent raised concerns with a probabilistic risk appetite expression in terms of there being an ‘acceptable level of bank failures’ and how such a measure would translate into the necessary qualitative and quantitative requirements. Therefore, there is a need for a targeted survival period, based on a realistic assessment of how long it is going to take for a problem to be identified, possible solutions (such as mergers) investigated, and deposit lists drawn up to allow a smooth and orderly resolution.
- 4.12 In contrast, other respondents would approve the alignment of our risk appetite for liquidity with that for capital, and the use of the same parameters. This set of respondents still recognised that the selection of timescales may have to differ as liquidity risk can be contagious and fatal within a very short period for a retail financial institution.

4.13 Some respondents proposed different ways in which the risk appetite might be better expressed. Some examples are:

- survival periods under different scenarios and stresses;
- regulators establishing base case scenarios that are applied to liquidity data provided by all firms;
- identification of scenarios that can address a variety of conditions and sources of risk that might arise and potentially identify risk factors at an early stage;
- periods over which firms should manage liquidity risk;
- appetite for failure permitted to each firm's management; and
- articulated trigger points for intervention by the Tripartite Authorities.

4.14 We asked:

Q21: How should we apply our risk appetite to our stress-testing requirements? Which assumptions should be applied and over which periods? How should we develop what we mean by 'forward looking' in SYSC 11.1.11R?

4.15 Several firms supported applying detailed stress-testing requirements to the shorter period but thought it would be inappropriate to apply specific quantitative stress-testing requirements in longer periods, given the bespoke nature of firms' business, risk appetites and risk-management approaches. For the most part, these respondents recommended a qualitative approach for longer stress periods as they are likely to involve behavioural assumptions and mitigation activities. One respondent proposed that for longer-term liquidity horizons, individual assumptions should be developed and ratified within individual institutions to ensure they are tailored to that institution's business model and risks. Supervisors would then challenge the assumptions used.

4.16 Some respondents would support the introduction of more prescriptive systemic stress and baseline scenarios that each firm should consider, e.g. closing covered bonds/securitisation markets plus a run on funds. One respondent noted that, as systemic damage has higher impact than the failure of a specific institution, there should be standard management information (MI) that institutions have to provide under central instruction. Receiving aggregate portfolio impact analysis would give the authorities a better gauge for systemic pressures and give some assurance to market participants that there are bellwethers operating for the market in which they participate.

4.17 One respondent proposed that our stress scenario design process might not be dissimilar to that performed by firms, so it should start from a base-case scenario which, in the case of the regulator, would be more systemic and acknowledge core company specific assumptions across the industry for significant liquidity drivers. Regular feedback between us and firms on observed stresses would be helpful for risk tolerance review, scenario validation and model reviews.

4.18 Some firms believe we should avoid being prescriptive about the stress-testing assumptions used for the behaviour of customers, counterparties and markets.

They suggested it should be up to individual firms to determine which tests are relevant to them and which are the most important (in particular in the longer-time horizon where it is harder to model behaviour).

4.19 Other relevant points made in relation to scenario design include:

- there is a risk that we may focus unduly on the most draconian stress parameters/scenarios;
- only ongoing education and dialogue between firms and regulators will facilitate a common understanding of the different approaches to and applications of stress testing, nature and effect of stressed conditions, the range of stress scenarios that is relevant to consider and the stress scenario overlay that will permit the expression of the regulator's risk appetite; and
- there is a risk that limits set for larger international higher-rated banks are easier for them to achieve than smaller institutions and that these smaller firms are priced out of the market.

4.20 Respondents put forward numerous and varied proposals for developing what we mean by 'forward looking' in Senior Management Arrangements, System and Controls (SYSC) sourcebook 11.1.11R:

- Firms should consider shortfalls of up to six months to allow enough time to put remedial plans into practice. Over and above, firms should have a strategy for their funding requirements in the next 12 months and beyond, consistent with their stated risk appetite, together with contingency arrangements.
- Firms should take the base plan business forecast and project the next 12 months, applying reactive assumptions to the stress-test modelling.
- The definition will depend on how far in advance a firm must look to be able to restructure the balance sheet.
- The definition should ensure all banks have a funding management plan which addresses how the bank expects to fund anticipated budget growth and detail their strategic liquidity.
- The degree to which a firm's stress tests are forward looking will be the result of bespoke dialogue between the regulator and the firm, based on assumptions that are relevant to its own particular circumstances.
- Similar requirements exist as part of the accounting and auditing requirements. The common practice definition of this period is 12 months.
- The tenor buckets being measured should be extended out to two years and stress scenarios should include events that are assumed to happen at a point in the future as well as in the present.
- Forward-looking scenarios could comprise filtered and considered market sentiment, market micro-economic signals, long-term macro-economic analysis, systemic significance, potential adverse feedback of policies and sovereign environments.

4.21 We asked:

Q22: Are the proposals for amplifying our qualitative requirements sufficient to improve the robustness of banks' liquidity management?

4.22 Most respondents supported our proposals for amplifying our qualitative requirements. Some of those, however, raised the concern that qualitative requirements may not be enough to improve the robustness of firms' liquidity management and help prevent a chronic long-duration stress and, therefore, should be part of a risk-based quantitative regime. Several respondents warned of the risks to the market of suggesting that banks' liquidity management is not now robust. Others asked for additional guidance.

4.23 Several respondents argued that we should assess firms' approaches consistently across the banking industry, ideally within a standard framework which acknowledges the ability of banks to withstand stress differs widely by individual institutions and depends on several different factors, and where best practice is recognised. Some respondents alluded to the Arrow framework as the supervisory review process to be used when assessing the appropriateness of a firm's qualitative requirements. One respondent suggested we let firms know our view of whether their approaches are considered to meet the requirements, with an increased flow of information between us and the Bank.

4.24 A frequently-raised issue was the importance of senior management robustly challenging assumptions and scenarios. Respondents also mentioned the need for the regulator to understand stress assumptions to satisfy itself that banks' senior management fully appreciate their entities' key vulnerabilities for liquidity risk and set appropriate limits. One respondent recommended that we should explicitly raise the issue of firms having satisfactory systems and controls in this context. They suggested firms should be able to demonstrate at a practical level the steps they have taken to assure themselves that policy has been effectively applied and that their underlying data is accurate.

4.25 We asked:

Q23: What changes, if any, are you planning to make to your liquidity policies and liquidity risk management practices in response to the recent market turmoil?

4.26 Most respondents indicated that their liquidity policies and practices are under review as a result of the recent market turmoil, with efforts being focused on governance, stress testing, model review and operational aspects of contingency funding plans. A few firms stated their policies and practices are constantly being refined and that no changes are planned specifically in response to recent events.

4.27 Several firms have added additional scenarios to their stress testing, increased the stress-test time horizon (e.g. out to six months) in an attempt to include chronic liquidity stresses and refined some of the assumptions based on recent market experience (with a widely-shared emphasis on the behavioural characteristics of retail balances). A few firms are considering revisiting limits, triggers and metrics. At least one respondent is planning a line-by-line review of its model construction.

4.28 Other common measures respondents mentioned include:

- increased diversification of funding sources and liquid assets;
- extension of wholesale funding maturity profile;
- more balanced funding model between customer deposits and wholesale funding growth;
- maintenance of strong liquidity ratios and full coverage of funding mismatches for a longer period;
- review of counterparty investment limits and minimum acceptable credit ratings;
- reassessment of the level of liquidity and quality of liquidity held, and re-categorisation of liquid asset classes for limit purposes;
- more granular and frequent reviews and testing of monetisation assumptions for unencumbered business assets held in trading books; and
- review of sectoral concentrations and seeking membership of the central bank standing facilities, reserves scheme and OMOs (building societies).

4.29 We asked:

Q24: What role do you think models should play in regulating liquidity?

4.30 A vast amount of issues relating to the use and design of internal models was raised and opinions on the role they should play in regulating liquidity were diverse.

4.31 Most respondents recognised the value of internal models as a framework of control and a useful reference point for monitoring and measuring liquidity risk, as well as for helping management set their liquidity risk appetite. The view was commonly held that models can capture company-specific business models, the nature of firms' interaction with counterparties, accessibility to markets, intra-group dynamics, and its ability to generate liquidity or alter its risk drivers. They would enable tailored quantitative requirements, based on bespoke behavioural adjustments, and would place emphasis on accountable governance, in line with principles-based regulation.

4.32 Some respondents argued that we should permit the use of models and, recognising that not all firms and not all banks are the same, allow firms to use a wide range of modelling methodologies appropriate to the nature and scale of their activities. Regulators should therefore accept that models used by different firms will differ and refrain from imposing a single framework. One respondent advocated that, for certain types of business, internal models should be the main building block for regulatory supervision and that using them for qualitative reporting to regulators will help align liquidity discussions.

4.33 On the contrary, some respondents felt that statistical models have only a limited role to play in liquidity regulation as liquidity stresses are rare events that make it difficult to construct any meaningful probability distributions. One respondent said that the regulator should not base its assessment of liquidity on internal models of banks.

4.34 Some other points made by respondents worth highlighting are:

- complex models make it difficult to see where the key assumptions are. The more sophisticated the model, the more danger there is of over reliance on it. Simpler models, based on what if cash flow forecasts, are critical to determine liquidity requirements;
- specific stressed factors based on each firm's own modelled interpretation of past events will lead to inconsistencies across firms;
- unnecessary burden on smaller firms without the resources to build such models;
- importance of users of the model output being aware of the model's limitations and the assumptions used;
- models should only be applied when supported by enough historical and empirical evidence to ensure robustness;
- models should not substitute for the judgement and practical experience required to manage liquidity in a real situation;
- models need to make sufficient allowance for impacts on markets changing the behaviour of institutions, using complex instruments featuring credit spreads and repricing points; and
- there is a risk of firms 'negotiating' liquidity requirements with us, once the current market turbulence is over.

4.35 Some respondents recognised there may be a case for regulators to prescribe some standard structures and parameters values but asked for enough scope for banks to use their own formats and assumptions, provided they can be justified and that they have been reviewed by the bank's management. Others advocated against using standardised modelling assumptions across the board because of the specificity of liquidity risk. Several respondents advocated using standardised haircuts and stresses as a way of ensuring the regulator can judge all firms on the same basis in times of crisis. It would also allow participants in the market to have confidence in the counterparts with whom they are dealing.

4.36 One respondent indicated that the FSA needs, through the reporting mechanisms, to be able to discern the contractual maturity profile of assets and liabilities, the expected maturity profile, and the key assumptions made in moving from the former to the latter. Without this they are unable to identify inappropriate assumptions and risks arising from changes in consumer or institutional behaviour.

4.37 We asked:

Q25: Do you agree that quantitative requirements are a necessary component of our liquidity regime? Do you agree that we should aim for a single quantitative regime to replace the three existing ones?

- 4.38 Most respondents agreed that quantitative requirements are a necessary part of our liquidity regime, particularly for the short term, and that we should aim for a single quantitative regime to replace the existing ones. Several firms, however, remained sceptical of their use in safeguarding against long-term chronic liquidity stresses and of the possibility of standardisation beyond institutions with similar risk profiles, business models and market presence. One respondent suggested that individual firms' metrics should be evaluated as an important part of prudential supervision.
- 4.39 Many firms recognised the benefits of quantitative requirements in terms of transparency, comparability (to identify outliers and to have industry averages available to enable institutions to benchmark themselves against their peers) and harmonisation of any future liquidity disclosure. It was also widely acknowledged, however, that these benefits must be balanced with the need for the regime to remain suitably responsive to the diversity of activities undertaken by firms, as well as their size, complexity, demonstrated capabilities and financial conditions. The particular quantitative requirements need to reflect the business and risk management processes of the firm. Some firms added that any form of quantitative requirements should also relate to the likely demands on liquidity and the quality of liquid assets.
- 4.40 Several respondents proposed that the new single regime should incorporate elements of the sterling stock regime and the mismatch regime, with some sort of minimum holding of survival stock. One respondent argued that a Basel II standardised or advanced approach would provide the necessary flexibility to accommodate differences between banks' business models and remove the incentive to under-insure against liquidity risk. Another firm stated its preference for a regulatory liquidity framework that would provide different approaches based on the type of business a specific entity is conducting (single quantitative regime for institutions conducting predominantly banking book business and a more flexible qualitative for trading book business).
- 4.41 We asked:
- Q26: Would the mismatch approach, suitably refined, provide an effective framework for quantitative requirements for all banks?
Should most/all banks be required to hold a survival stock of high-quality assets, as in effect the quantitative requirement at the short term end of a mismatch-based regime?
- 4.42 Most respondents believed that a mismatch approach, suitably refined and with bespoke behavioural assumptions based on board policies, would provide a starting point for the development of a new regime. Some of these respondents also believed that a uniform scheme across the financial services industry will make comparison simpler and liquidity positions easier to analyse. Several respondents would not support such a regime being introduced in the UK in advance of the prospect of an internationally agreed consensus and, if such a consensus does not emerge, further consultation should take place with the industry before any alternative is implemented. Investment firms would generally accept the principles of the mismatch regime on the basis that internal models may be used and that it is primarily a reporting regime. One respondent advocated against a generic mismatch approach as it could not be applied across the board due to differences in currency, geographic

diversity and business lines. Another, however, was supportive of a single quantitative framework for all, catering for heterogeneous business models. The regime should be based on a standardised/advanced Basel II type approach that would result in lower holdings of liquid assets, provided that banks could demonstrate that their business models are less risky. Limits would, therefore, have to be in place.

- 4.43 Several respondents observed that the current eight-day and one-month time buckets are too short term to be effective against preventing a liquidity problem arising and therefore supported the extension of the regime. Others pointed out the effectiveness of the framework for all banks would depend on the behavioural adjustments applied (in particular retail deposits) and the range of marketable assets treated as sight assets.
- 4.44 Several respondents proposed that, if limits were established, firms should be able to use their own models to assess the extent to which they meet the limits subject to appropriate regulatory due diligence and approval. For smaller institutions, or those with a more straightforward business model, an alternative simple approach required the holding of assets that are eligible at the central bank and reliably liquid to meet these quantitative limits.
- 4.45 Building societies introducing the scheme for the first time would welcome appropriate guidance and time to incorporate the structure into their liquidity processes/systems. One building society suggested that any requirements take into account smaller societies' resource restraints (both staffing and systems).
- 4.46 Some respondents thought that a one-size-fits-all framework might not be optimal, for example, it could suggest that building societies are substantially the same as banks, despite their different funding and asset profile. Even though the framework may result in building societies being treated differently from banks, for example, by the nature and intensity of stress testing, frequency and focus of onsite reviews and amounts of liquid assets, this distinction might not be enough to reassure retail depositors.
- 4.47 Most respondents agreed with the idea that all banks should be required to hold a survival stock of high-quality assets, with at least one respondent arguing it would bolster the system's resilience and help establish the UK banking system's reputation in the international financial markets. A commonly-held view was that the definition of high-quality assets needs to be considered carefully; while too tight a definition will lead to a shortage of those securities and will accordingly lead to much higher costs in complying with any liquidity regime, recent events have also clarified the true value of some marketable assets for liquidity purposes. One respondent considered that structured finance and other less-liquid instruments should not be eligible to be included in the definition.
- 4.48 A number of important points were raised regarding the survival stock of liquid assets:
- the quantum should recognise the level of risk being run and the fact that liquidity is also provided by having positive inflows in the short term funded by long-term funding;

- the definition of survival stock should be wide enough to recognise effective risk management tools and group liquidity stock held by a non-UK parent company;
- a firm considered that liquid stock should be held at a group level;
- the position of branches needs to be analysed separately;
- requirements to hold a stock of liquid assets should not be the sole quantitative requirement; the size of the mismatch is also relevant;
- a firm envisages cases where it would not be appropriate to require a firm to hold a stock of such assets;
- there were concerns over the definition of liquid assets, as what is appropriate differs between banks and building societies; and
- the difficulty with a stock in any mismatch-based regime is due to the narrow definition of liquid assets, as the ability to monetise assets is company-specific.

4.49 One respondent proposed that, rather than force all firms to maintain a survival stock of high-quality assets, it might be more appropriate to ensure firms have monitoring in place to be certain that they have sufficiently liquid assets at all times. However, these assets should be of their choice, as liquidity risks arising in each firm may be different in nature or magnitude.

4.50 We asked:

Q27: Have we captured the most important differences between banks? Are there other criteria relevant to liquidity risk? Do you agree that these do not justify the continuation of different quantitative regimes?

4.51 Overall, respondents agreed that the DP has captured the most important differences between banks and these do not justify continuing different quantitative regimes. A single regime would be considered suitable by several respondents, but subject to enough flexibility to adjust the qualitative regime so it is appropriate to the risks and business model of the institution concerned. One respondent felt it is important that arbitrary cut-off points are not applied to attempt to fit everyone into a single regime when this is inappropriate.

4.52 One building society warned we should consider risks to the stability of the building society regime that might arise from changing the regime.

4.53 Several respondents noted the DP may not cover the particular circumstances surrounding investment banking activities, although at least one respondent believed these can be reflected in a more principles-based approach. Additional types of potential differences identified by respondents include:

- specialist or mono-line versus diversified banks;
- a variety of group structures;
- perceived financial strength/asset quality;

- funding diversity;
- credit rating;
- membership of clearing systems;
- access to Bank or other central bank liquidity facilities; and
- international operations.

4.54 As noted by some respondents, the types of banks not captured in the DP are UK-based banks with significant overseas business and with needs to meet new liquidity requirements in different locations, and branches of foreign banks operating in London where the role of the support from the respective head office is underplayed.

Supervisory information

4.55 We asked:

Q28: What information would, in your view, help the FSA obtain a clear picture of the liquidity positions of the markets as a whole and understand the liquidity positions of individual firms and their implications? What information should, in your opinion, be considered as part of an Early Warning System on liquidity?

4.56 Most respondents were supportive of us working towards obtaining a clearer picture of the liquidity positions of the markets as a whole and of individual firms, with one observing that it would be useful if the FSA or the Bank could make trends available to allow firms to benchmark themselves against the industry. One agreed with proposals for an early warning system and a single version of liquidity reporting, but championed a simplified one for non-deposit takers.

4.57 Some respondents recommended that the FSA and the Bank should increase the size of their market intelligence departments and foster dialogue with firms on a formal and informal basis. This should provide a better picture of the state of the actual market and highlight current concerns and issues. Several firms considered this continued open dialogue the best early warning system, together with standardisation of the information required and confidential feedback on peer groups. One respondent noted that it would be helpful if we communicate the key liquidity concerns or best practice we see back to the broader market. Another respondent questioned whether we had the resources to interpret and use the information gathered appropriately.

4.58 Several respondents noted collecting liquidity positions from different firms will not always result in meaningful data and that more detailed information on banks' liquidity positions will not necessarily be helpful to us, as it monitors different firms' approaches to liquidity risk. One firm maintained that prudential supervisors are not in a position to assess the liquidity of individual firms and reactions and sanctions by the market are more effective.

- 4.59 One respondent proposed that reporting should start with contractual positions, and then assess how those positions look after the application of behavioural overlays in normal conditions and then how the assumptions in normal conditions are impacted by stress/scenario testing. Another defended the idea of having common model outputs based on common stresses and haircuts as the only way for us to have a truly comparative picture of liquidity across all firms. One firm favoured the development of a common set of high-level liquidity measures to help with a general picture of liquidity management, including outliers, which could then help to shape further tailored information requirements.
- 4.60 One respondent added that, to gain a better understanding of firm specific liquidity risk, we should review firms' internal MI, as a useful means of assessing whether a firm has identified its key liquidity risks and whether its board or senior management are receiving appropriate information on how the firm is responding to and managing those risks. A thematic review on this area might result in best practice being fed out to industry and improved standards generally – provided that proportionality is achieved. This could be a relatively low-cost approach for us to adopt.
- 4.61 Respondents offered an extensive list of possible early warning indicators, including:
- shortening re-financing profiles;
 - the relationship between LIBOR and base rate;
 - liquidity premium;
 - credit spreads;
 - wholesale funding volumes and cost;
 - central bank borrowing;
 - volumes within payment systems;
 - FX swap markets;
 - changes in names in market capacity;
 - changes in firms' credit policies to specific counterparties;
 - tracking aggregate volume of issuance from the UK banking sector in each type of wholesale market debt instrument and comparing this as a proportion of total global issuance to spot trends over time; and
 - a negative percentage change in deposits, percentage change in overdrafts/loans, change in debt spreads, change in stock price or credit rating agency actions.

5 Investment firms MFA

Introduction

- 5.1 Our approach is to intervene in markets only when a market failure prevents us from achieving an efficient market solution. Chapter 3 of DP07/7 analysed market failures in firms' management of liquidity risk. One response suggested our analysis was not clear as to whether a market failure existed only regarding banks' management of liquidity risk, or also for that of investment firms or a wider set of firms. This chapter clarifies our thinking on this point.
- 5.2 The US Federal Reserve's recent loans to investment banks and its support of JP Morgan's purchase of Bear Stearns have increased interest in whether the markets in which investment firms operate function efficiently. Typically, central banks lend only to deposit-taking banks. However, on 14 March 2008, the Federal Reserve loaned funds to JP Morgan, a bank, securitised on the assets of Bear Stearns, an investment firm. On 17 March 2008, the Federal Reserve effectively opened its discount window to the major US investment banks, for a temporary period.
- 5.3 Even without central-bank lending to investment firms, there is a question about whether the risk that an investment firm fails to manage its liquidity risk adequately constitutes a market failure. If central banks are going to lend to investment firms, the consequent risk to taxpayer funds may give regulators an additional reason for ensuring investment firms manage their liquidity risk well enough so they need central-bank loans as rarely as possible.

Definitions

- 5.4 Before we discuss whether investment firms suffer from a market failure in managing their liquidity risk, it is helpful to define the terms 'investment firm' and 'market failure'.
- 5.5 In general, we define an investment firm as a firm that provides investment services to clients, but does not issue deposits, so is not a bank, building society or credit union. Because investment firms do not issue deposits, they are not covered by the FSCS's 'Accepting Deposits' subscheme. Within this broad definition, some investment firms

¹ See the FRB press release here: www.federalreserve.gov/newsevents/press/monetary/20080316a.htm. The relevant clause of the Federal Reserve Act, under which the Federal Reserve has lent to investment banks, section 13(3), was actually amended by the FDICIA of 1991, but replaced a similar previous clause, 13(b). Fetting (2002) provides an interesting history of the use of this clause.

deal on own account, and some investment firms also hold client money. In this chapter, we think of an investment firm as undertaking both of these activities.

- 5.6 We define a market failure as a circumstance that means we, through some intervention, can improve on the market solution. For this to be possible, markets would have to fail to produce an efficient outcome, because of a problem such as monopoly or asymmetric information, and a feasible remedy would have to exist. The latter clause is important, because all real-world markets could be described as suffering from asymmetric information to some degree. However, both theory and experience suggest that regulatory interventions are likely to improve outcomes in only some real-world markets.²

Current UK regulatory arrangements

- 5.7 This section describes current FSA requirements on investment firms' management of liquidity risk and on their capital holdings.
- 5.8 Our current rules on investment firms' management of liquidity risk are set out in SYSC 11 of our Handbook. Importantly, the requirements for investment firms are entirely qualitative. In contrast, the requirements for banks and building societies contain three sets of quantitative requirements as well as the same qualitative rules.
- 5.9 We would also expect regulatory capital requirements to reduce investment firms' exposure to liquidity risk. Higher capital requirements will reduce the risk that a firm becomes insolvent. A firm that is less at risk of insolvency is more likely to retain the confidence of its counterparties, so it should not find its counterparties suddenly withdraw their funding.
- 5.10 Although existing capital adequacy rules do not distinguish between banks and investment firms, the requirements impose different burdens on securities and 'traditional' banking activities. This difference has generally been justified on the grounds that securities and deposit-taking business imply different levels of risk and market externalities. To do this, each institution has to separate its securities 'trading book' from the rest of its business, and the trading book alone is subject to 'lighter' requirements more appropriate to the risk securities trading entails.
- 5.11 Concerning deposit insurance, it has been argued that, since deposit protection schemes do not cover investment firms and central banks do not lend to them, the failure of an investment bank would not put government funds at risk. So there is less need to use capital requirements to prevent investment firms (or their associated business) failing.

Arguments why investment firms suffer the same liquidity market failure as banks

- 5.12 We now discuss three arguments why investment firms suffer the same market failures in managing liquidity risk as banks, at least to some degree: first, the lack of transparency of investment firms' assets; second, investment firms' vulnerability to system-wide liquidity shortages; and third, investment firms' systemic importance, which may make any liquidity problems they face problems for policy.

2 This definition is given in our Market Failure guide, at www.fsa.gov.uk/pubs/other/mfa_guide.pdf.

Opacity of investment firm assets

- 5.13 DP07/7 stated that banks could suffer from liquidity failures partly because the quality of their loan assets is opaque to their counterparties. For this reason, and because banks are highly leveraged, counterparties' view of a bank's risk of default, and thus their willingness to lend to it, could be subject to wide fluctuations. The DP noted that this problem could also apply to many non-bank investment firms.³ The failure of Bear Stearns appears a case in point – due to the firm's heavy exposure to mortgage-backed securities of opaque quality, its counterparties rapidly changed their opinion of its solvency, and withdrew their funding. It may be hard to argue that Bear Stearns was suffering only from a liquidity problem, and not also from a solvency problem. However, it would appear possible that other investment firms whose solvency is opaque could fail due to a sudden but incorrect loss of market confidence in their solvency.

Vulnerability to system-wide liquidity shortages

- 5.14 Since investment firms and banks operate in many of the same markets, there is some risk that a system-wide lack of liquidity could lead to wide fluctuations in the market price of investment firms' assets, and a high price for investment firms' borrowing. Since many investment firms are highly leveraged, they may be vulnerable to a general loss of confidence in financial markets.
- 5.15 The increasing integration of banking and securities business may have made investment firms more exposed to liquidity problems that affect banks. The recent evolution of mixed banking and securities businesses may mean that liquidity shocks in one set of firms carry over to the other set of firms. Arguably, this mixing of banking and securities business within banking groups may justify specific regulations for investment firms, given the likelihood that a default by an investment-firm subsidiary would damage the credit standing of the deposit-taking parent bank.⁴

Interdependencies between banks, investment firms and capital markets

- 5.16 While traditionally systemic risk concerns have focused on deposit-taking institutions, the failure of an investment firm may lead to systemic consequences due to the extensive cross-firm and cross-sector interdependencies they have with other market participants. Credit risk transfer practices, and especially the increasing importance of credit derivatives and securitisation markets, have increased the links between banks and securities firms. In fact, the exposures to these products usually increase together with the overall risk in the economy. Under adverse market circumstances, correlations between markets tend to be higher and increases in demands on liquid assets via margin requirements may generate or exacerbate a situation of instability.

Size and importance of investment firms

- 5.17 If investment firms were small or not of systemic importance, any liquidity problems they face would not appear to create a rationale for regulatory involvement. For

3 See DP07/7, paragraph 3.12.

4 See Dale (1994).

example, regulators typically make little effort to prevent hedge funds from experiencing liquidity problems, in part because most hedge funds are small relative to the financial markets.

- 5.18 By contrast, anecdotal evidence suggests the role of some investment firms as market makers and providers of liquidity is so important that any one of them failing would cause widespread economic problems. For example, the OECD notes that ‘default by one or more large securities dealers will lead to further defaults and that the failures will extend into the core of the banking system’⁵.
- 5.19 It is also possible an important investment firm failing could have far-reaching effects through reductions in investor confidence. The social costs could include the following:
- shrinkage of the asset management business. ‘Good’ firms could be tainted by ‘bad’ firms’ failure and withdraw from the market or migrate to other centres;
 - uninformed investors, fearing that they might be exploited, will be reluctant to invest, or will invest in other financial centres;
 - small uninformed investors will be particularly exposed, giving rise to welfare losses.

Arguments why investment firms suffer less from liquidity market failures than banks

- 5.20 This section discusses four arguments why investment firms may suffer less from liquidity risk than banks. These are, first, that investment firms are not subject to depositor runs; second, the assets investment firms hold are more liquid than banks’ assets; third, relative to banks, investment firms incur lower transaction costs when managing liquidity; and, fourth, investment firms seem to be of less systemic importance than banks.

Lack of depositor runs

- 5.21 As stated above, investment firms do not offer retail deposits. Retail deposits have the important features that most are held by unsophisticated depositors, and most are available on demand. This leaves deposit-taking banks exposed to costly, not necessarily rational runs.⁶ Although investment firms are in principle not subject to the same type of runs, the recent financial turmoil has evidenced that investment firms have been large underwriters of asset-backed commercial paper (ABCP). So the dependency of these firms on short-term funding appears now to be higher, and they are vulnerable to sharp changes in market sentiment.

Greater liquidity of assets

- 5.22 So far, existing theory suggests several reasons why investment firms have greater incentives to hold more liquid funds than banks. Several factors have been shown to influence the demand for liquidity of corporations.⁷ Overall, the amount of liquidity

5 OECD (1991).

6 See Diamond and Dybvig (1983).

7 Kim et al. (1998) study the determinants of corporate liquidity holdings in an influential study.

a firm holds depends on the costs of external financing, the variance of future cash flows, the transaction costs derived from selling assets to obtain liquidity and the return differential between the institution's illiquid and liquid assets.

- 5.23 Small firms tend to face more borrowing constraints than bigger ones and the latter also enjoy scale economies resulting from a substantial fixed cost component of security issuance costs.⁸ Briefly, we can expect investment firms will face borrowing constraints to a larger extent than diversified large banks.
- 5.24 Some authors argue that bankruptcy is more costly for firms with a large proportion of marketable assets (firms with high market-to-book ratios). These firms are expected to maintain a larger proportion of liquid assets to minimise the cost of financial distress.⁹
- 5.25 A third prediction implies that the greater the firm's cash-flow variability, the larger the investment in liquid assets. Investment firms' assets are marked to market and subject to high levels of variability due to sudden turbulences in markets.
- 5.26 All the previous arguments would suggest that investment firms hold larger amounts of liquidity than their banking counterparts.

Lower transaction cost when managing liquidity

- 5.27 In principle, the costs of holding a high stock of liquidity or short-term assets do not differ between banks and investment firms. We can expect, however, that investment firms will incur lower transaction costs when they rebalance their portfolios to manage liquidity due to the high marketability of assets they hold.

Lesser systemic importance of investment firms

- 5.28 As we have mentioned, investment firms' activities are clearly not subject to runs in the same way as banks, so they should not be subject to contagious and systemic disturbances in the same sense as banks. In addition, contagion due to an investment firm failure seems to be less likely due to the nature of contracts involved and the higher marketability of investment firms assets compared to banks.
- 5.29 Overall, existing studies argue that systemic risks are less evident for the non-banking financial sector.¹⁰ They assert that:
- The high marketability of assets means that, in contrast to banks, the value of firms in liquidation differs little from the value on a going-concern basis. If an investment firm fails and client funds are held separately from the firm's own assets, portfolios under management can be transferred at a (relatively) low cost from one manager to another. Moreover, provided that asset managers do not take positions on their own account, inter-linkages between firms are limited. There is therefore little reason to believe the collapse of an asset manager should have repercussions elsewhere or have implications for consumer protection.

8 Barclay and Smith (1996).

9 Schleiffer and Visny (1992), Stohs and Mauer (1996).

10 See Franks and Da Silva (2003) and references therein.

- The nature of the contracts involved make contagion less likely. However, in the case of full-scope brokers and dealers, failure can have more contagious effects, since client assets are closely associated with those of the firm. Since brokers and dealers take positions on their own account, enhance liquidity and accelerate the execution of transactions, a financial collapse elsewhere can threaten solvency and disruptions may be of broader significance outside the financial sector. So there is stronger justification for prudential regulation to protect systemic failures in brokers and dealers than in pure asset management, but even then it is not as compelling as with banks.

Banks' liquidity management and the Lender of Last Resort (LORL)

- 5.30 The LORL function of providing liquidity assistance to systemic institutions may effectively influence banks' liquidity management systems. Banks' anticipation of lending from the central bank at times of distress might reduce their incentive to insure against liquidity risk or other problems that might leave them unable to borrow from other lenders. We can describe this effect as moral hazard. As a consequence, one can expect that the greater the potential support from the Bank in case of liquidity crises, the lower the liquidity buffer the banks hold¹¹.
- 5.31 Although central bankers have been reluctant to rescue investment firms due to their lessened systemic implications, the increasing importance of these firms may change this assumption. This was evidenced by the US Federal Reserve's recent loans to investment banks and support of JP Morgan's purchase of Bear Stearns.

The effectiveness of regulation of liquidity management in investment firms

- 5.32 The current capital adequacy rules for banks and investment firms may have an impact on the way these institutions manage liquidity. However, it is well known that through structured finance and securitisation techniques banks can reduce the level of capital required by the regulator.
- 5.33 If there is enough transparency, market discipline should work better for investment firms than for banks given that bank liabilities generally do not incorporate a risk premium that adequately reflects the risks a bank incurs.¹² However, the recent market turmoil has shown that even sophisticated market participants may not be able to assess the real risks they are bearing, especially when complex instruments are involved.

Conclusion

- 5.34 Market failures are departures from the economists' notion of a perfectly efficient market. In this chapter we have given a brief but comprehensive review about whether market failures in firms' management of liquidity risk are different for banks and investment firms, completing the analysis we gave in Chapter 3 of DP07/7.

11 Aspachs et al. (2005) find support for this argument in a sample of UK-owned banks.

12 Recent regulatory proposals, such as the requirement for deposit-taking banks to issue specific stakes of subordinated debt, aim to overcome this problem (see e.g. Evanoff and Wall, 2001).

- 5.35 The results of our analysis suggest investment firms hold more liquid assets and are less important than banks from a systemic point of view. However, the increasing integration of banks and securities business and the central role that some investment firms play as market makers, facilitating the smooth functioning of several markets, may generate industry-wide difficulties in times of liquidity distress and uncertainty.
- 5.36 The analysis provided here, at this point, does not reach firm conclusions as to what should be the ideal regulatory response to the risks created by investment firms' management of liquidity. Instead, we want to raise the relevant arguments and ask for responses as to whether we have left out any important arguments or evidence. We will include any potential new rules on liquidity risk in the CP later this year.

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List of non-confidential respondents to DP07/7

Andrew Mullineux, University of Birmingham

Bank of Tokyo-Mitsubishi

Barclays Bank

Building Society Association (BSA)

Charles Goodhart, London School of Economics

Citigroup

Credit Suisse First Boston

Deutsche Bank

FCE Bank

Goldman Sachs

Institute of Chartered Accountants in England & Wales (ICAEW)

Institute of International Finance (IIF)

Institutional Money Market Funds Association (IMMFA)

Investec Bank

Joint Association (LIBA, BBA, ISDA) response

Kaupthink Singer and Friedlander

Merrill Lynch

Nationwide Building Society

Promontory Financial Group

Standard Chartered

State Street Corporation

Sterling International Brokers

Swiss Banking Institute, University of Zurich

Yorkshire Building Society

PUB REF: 001435

The Financial Services Authority
25 The North Colonnade Canary Wharf London E14 5HS
Telephone: +44 (0)20 7066 1000 Fax: +44 (0)20 7066 1099
Website: <http://www.fsa.gov.uk>

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