The management of liquidity

Mr Brian Quinn, an Executive Director of the Bank, discusses some of the issues involved in the management and adequacy of banking liquidity.[1] *Reviewing recent trends, he argues that standards of liquidity have probably been declining under competitive and regulatory pressures, notably in the case of international banks; while a riskier environment and new financial instruments can generate unexpected liquidity pressures. These developments are likely to stimulate efforts to arrive at a common system of liquidity measurement; however, an agreed minimum standard seems some way off. Mr Quinn goes on to examine the problems of the setting of a liquidity requirement and explains the evolution of the UK approach towards renewed emphasis on the concept of a stock of liquidity as a supplement to the maturity profile.*

Introduction

Much of the focus in the recent past among banking supervisors has been on the issue of capital adequacy and you will be aware of developments in the Basle Supervisors' Committee aiming to achieve convergence of capital standards for banks in the G10 countries.

In all the excitement generated by what has come to be known as convergence, the question of liquidity seems to have been somewhat lost sight of. In one sense, this is not to be wondered at. The analytical process of definition, measurement and the setting of a requirement for the liquidity of banks is even more difficult than for capital. It is also acknowledged that adequacy of a bank's liquidity must be judged in the context of each country's banking system, where there are very considerable differences of structure and operating characteristics. The assessment of a bank's need for liquidity is in some countries complicated by the existence of other arrangements in the system, notably the arrangements for monetary control, which may go some way to answering the question, but not always and certainly not unambiguously.

In some countries there may be a reasonable question as to whether the adequacy of liquidity is a serious issue. For example, in those systems where the banks are all owned by the state, the management of liquidity may represent a problem of a much lesser nature than in those systems where banks are public companies free to compete with one another and with other providers of finance in the private sector. Other banking systems have as a central feature a requirement that each bank should hold a prescribed proportion of its assets in the form of government securities as an aspect of broader public policy objectives, notably where the banking system is seen as an instrument of the process of economic development. In still other countries, as I indicated above, banks may be required to hold short-term highly liquid assets as an element of the arrangements for controlling the supply of credit or the monetary aggregates.

In each of these cases the task of managing liquidity may be somewhat simplified. Nevertheless, even in a closed financial system, when dependence on funds from external sources plays no part in the arrangements, banks in such countries have still got the job of managing the flow of their assets and liabilities in such a way that they may meet calls on them by depositors on the dates when the liabilities fall due. That task may be made easier either by the close association between banks and the authorities, or by the mandatory holding of paper which is readily discountable with the central bank. But the issue still exists—or to make the point in a more vivid way, there are few if any countries where there cannot possibly be a run on a bank.

For many banks the existence of an international business in foreign currency alongside their domestic activities adds a new dimension to liquidity measurement. Whereas a bank may have a recognised and stable role domestically, internationally it will be a relatively smaller fish in a much larger pond. The stability of funding of its international business may well be much lower, and it may be much less well regarded in the market place. There are a number of examples where liquidity problems have arisen from abroad, notwithstanding an apparently secure position at home.

Nevertheless, before pursuing the issue, I should point out that there is a view that there can be no liquidity problem for an individual bank and that the only proper determinant of the ability of a bank to meet its liabilities as they fall due is the quality of its assets. The proposition is that a bank with assets of high quality will always be able to realise some of those assets if the need should arise; will be able to borrow in the banking markets against the perception of the quality of its assets; or, in extremis, will be able to find a purchaser who would

(1) In a speech at the SEANZA forum of banking supervisors, in Sydney, on 23 March.

assume the assets and liabilities whilst meeting the immediate call for liquid funds. The corollary of this argument is that banks with assets of poor quality may be able to arrange temporary funding but will ultimately be unable to find the necessary liquidity by any of these means.

While I do not subscribe to this view, like many simplifications, there is an element of truth in it. However, it reflects an attitude which strikes me as absolutist and neglects the vital role that time plays in assessing the quality of banks' assets, quite apart from being a very high risk strategy. A central function which a bank performs is the maturity transformation of funds, with banks acting as intermediaries between short-term lenders and longer-term borrowers. This process of maturity transformation generates the possibility of both profit and loss. The latter may arise either because of imperfections or errors in management judgement, or because of extraneous events which may upset the reasonable assumptions on which these judgements are based. Hence, it is possible for assets either to gain or to lose value and, thereby, to create a liquidity problem. Furthermore, if the capacity of a bank to recover some of its claims is placed in doubt because of funding difficulties, both those claims and others in the balance sheet may deteriorate in value. Or, to put it more prosaically, people may stop paying their debts if they think that the creditor may not be around to collect.

More generally, while the value of liabilities is certain, the value of a bank's assets is less easily and less absolutely established. Concern about a borrower may either crystallise into a loss or may evaporate under the attentions of management or through an improvement in external circumstances. The capacity of a bank to manage its assets over a period of time is both central to the skill of banking and relevant to the management of its liquidity; and that capacity constitutes the link between solvency and liquidity. It may be true that a bank with good quality assets is unlikely to face problems of liquidity, but quality can vary in a way that is both within and outside the control of management demonstrating, in my mind, the need to manage liquidity prudently.

Recent trends in banking liquidity

I have suggested that in international discussions the question of liquidity management may have been overshadowed by the attention paid to capital over the last few years. I believe that state of affairs is likely to change, at least as far as banks operating internationally are concerned. In 1985 the Basle Committee reported its concerns about liquidity to the G10 Governors, suggesting there was a tendency for standards of liquidity to decline under much the same competitive pressures as had affected capital adequacy. This had led some banks towards excessive reliance on more volatile purchased funds to manage their liquidity in place of precautionary balances of short-term and liquefiable assets. The evidence to support these concerns is not altogether easy to assemble, but information available in the G10 countries supported the general observation.

In passing, I believe we should acknowledge that the supervisors may have contributed to that process in so far as they have pressed banks to raise their capital standards. Allied to existing competitive pressures, these requests have had the effect of banks examining their assets to determine the contribution which they are making to the generation of profits and reserves. In some cases banks may have economised on assets commanding low profit margins which tend to be of a highly liquid nature, notably holdings in government paper.

The corpus of third world debt on the balance sheets of some international banks and the tendency of corporate borrowers to raise funds direct from capital markets may also mean a deterioration in average quality—and therefore of liquidity—of balance sheets. I believe there may also be a greater degree of concentration in many banks' assets portfolios as they have competed to retain the business of large customers by entering into very large commitments to support the expansion of these borrowers' businesses, particularly through acquisition.

These developments have been matched by increased reliance on purchased wholesale funds and an increasing tendency of banks to increase the proportion of their liabilities denominated in foreign currency, particularly the US dollar.

However, the trends are not necessarily all in the same direction. The growing securitisation of banking business may have both enhanced the mobility of assets and increased the capacity of banks to realise them. In the terms which have become familiar, banks are becoming risk managers rather than risk takers, with a corresponding reduction in the need to maintain liquidity lest the risks should crystallise into losses. It must also be accepted that the wholesale banking market has functioned effectively during a period of unprecedented turbulence and has not, on the whole, shown itself to be ultra-sensitive to temporary hiccups in an individual bank's situation.

Nevertheless, the comfort to be drawn is limited. For example, I have to confess to some doubts concerning possible differences between the theory of securitisation and the practice. It is far from certain that the various forms of securitisation fully remove the risk from the bank originating the product. Nor is it certain that the markets for new assets, some of which have a relatively short product life, can be relied on to maintain their highly liquid characteristics. Experience during 1987 in the market for floating-rate notes is scarcely encouraging and, at best, there must be a questionmark about this given the relatively short life of the securitisation process. At worst, the events of last October cannot have given encouragement to the proposition that markets in new financial products are able to maintain liquidity in the face of pressure—certainly not without very large and sudden movements in price.

On the whole, therefore, I believe the cliché that the world has become a riskier place for banks is, like most clichés, broadly true. These risks can come home to roost in the area of liquidity management, and new financial instruments, in particular, can generate unexpected liquidity pressures. If this is right, liquidity assumes a new significance and the issue for supervisors has renewed relevance.

The measurement of liquidity

The response of the Basle Committee to the perception of a deterioration in international banks' liquidity was the same as that adopted when in 1982 they arrived at the judgement that capital standards among banks in the G10 countries had declined: to try to arrive at a framework of liquidity measurement that would provide information to allow supervisors to compare standards of liquidity among banks in member countries.

Since the essential question is whether a bank can meet the claims on it on the dates on which these claims fall due, it was agreed that a calculation of the cash flow of a bank must be the starting point. That is to say, the management of a bank must have the ability to estimate the profile of a bank's ability to meet maturing obligations.

This profile would represent all of the items on both sides of the balance sheet in terms of the cash which they abstract or generate on a time spectrum from the shortest to the longest-dated asset or liability. Such a structure would have the following principal characteristics:

(i) it should take account of assets and liabilities with both fixed and variable maturity and of the stock of liquid assets;

(ii) it should identify separately readily marketable securities which can be folded into the maturity analysis, with discounts where appropriate;

(iii) it should distinguish, if possible, between stable funding from retail deposits and volatile purchased funds;

(iv) it should focus attention on the liquid position at short term, notably the position at up to one month and up to three months;

(v) it should endeavour to incorporate the liquidity of the foreign branches of banks to which it is applied where they play an important group funding role;

(vi) it should encompass both domestic and foreign currencies;

(vii) it should take account of significant off-balance-sheet commitments to provide funds, and the availability of standby facilities to have funds provided.

Of course, in constructing such a maturity profile many very difficult judgements arise. For example, can one arrive at a sensible distinction between wholesale deposits and retail deposits? Is it possible to form a reliable assessment of the extent to which deposits collected from the public may be counted upon to remain with the institution if it should begin to encounter problems of confidence? Can a bank afford not to break the terms of a deposit when depositors react to doubts about the soundness of a bank by presenting themselves for early repayment?

On the assets side, similar questions abound. As indicated above, the realisable value of an asset may turn out to be questionable depending upon the circumstances in which a bank finds itself. For example, the value of government securities may be determined in the secondary market where the seller has no direct influence. But the knowledge that the bank involved is a forced seller may influence the value which the particular asset may realise. There are many other such questions which complicate the matter of measuring the assets and liabilities with respect to their capacity either to generate or to drain cash from the balance sheet.

Such a structure follows the approach developed and applied in many EC countries, including the United Kingdom. It produces a liquidity map the contours of which are chosen in a reasonably systematic way and which, like any map, allows us to compare across a varied terrain. To press the metaphor further, each bank will look rather like a valley or hill, depending on the nature of its business; but not, one hopes, like a bottomless pit. Just as the characteristics of each hill or valley differ, so also one would expect the liquidity profile of each bank to differ. There may be the odd volcano from which eruptions will generate discomfort for both the bank's management and the supervisor. Indeed, I imagine the ability to predict when such an eruption may occur may be broadly similar as between geologists and supervisors; they may know approximately when to look for rumbling but are always exposed to the risk of a sudden deterioration resulting in a crisis.

Setting a liquidity requirement

While the Basle Committee and the European Community are moving towards such an approach as a means of measuring the liquidity of banks within and between different countries, they have not yet addressed the much more taxing question of setting a common standard or requirement. That lies some way off. Indeed, I think you will see that it follows from what I have said that it would be extremely difficult to try and derive a single liquidity requirement for any banking system.

Indeed, it might well be wrong to do so unless the banks in a given system were very similar if not identical in the characteristics of their assets and liabilities; or unless there was a feature of this system which enabled them to transform the maturity structure at a stroke. This latter case would apply in a system where the banks held claims on the government or the central monetary authority in an amount which ensured immediate realisation at no substantial loss. But in such a system it is not obvious that a sophisticated system of measurement would be needed in any case.

Before going further it is important to be clear on the kinds of liquidity problems which might arise. Three possibilities come to mind:

(i) unexpected cash flow problems affecting only an individual bank;

(ii) liquidity pressures affecting a discrete group of banks;

(iii) problems of liquidity in the banking system as a whole.

As we are all aware, these simple distinctions do not always apply in practice. For this reason, but for other more fundamental reasons too, I would suggest that prudent banking should lead management to compose and carry out its liquidity policy with an eye to all three possibilities, although the public policy response may also vary.

The choice of a single requirement based on a system of measurement of the kind I have indicated above is made more difficult by changes going on in banking markets around the world. As these markets become less restricted as to access and functional boundaries and as the range of products on both the liabilities and assets sides multiplies, particularly through the use of off-balance-sheet instruments, year by year the interpretation of the resulting maturity profile becomes both more important and more challenging. It is obviously of the highest importance that management have the correct kinds and frequency of information to enable them to see what their liquidity profile is; and that the relevant systems and controls are in place to permit them to manage their liquidity efficiently and effectively. To say this in such general terms is, of course, to gloss quickly over myriad practical and operational problems, the importance of which can scarcely be exaggerated. Suffice to say that banking supervisors must give as much attention to the adequacy of systems of information and control in this area as they do in the area of credit or foreign exchange.

Having said all of this, the maturity profile permits both the management of an institution and its supervisor to form a judgement on what the correct liquidity policy is for a given bank. In principle, there are three possible ways of expressing this policy or requirement:

(i) to establish cover ratios which measure the extent to which the more volatile short-term liabilities are covered by readily realisable assets at short-term time horizon—say, overnight, up to thirty days and up to ninety days;

(ii) to set limits to the size of the mismatch profile in certain crucial maturity bands—say, up to eight days and from eight days to thirty days;

(iii) to set a 'survival period', expressed in terms of a minimum ratio to be maintained between gross cash inflows and gross outflows in a given maturity band.

In practice, such requirements amount to different ways of expressing the same thing: a cover of 100% at thirty days equates to a 0% cumulative net cash flow position, which can equate to a survival period of thirty days.

In the United Kingdom we have tended to favour the second approach seeking to agree with each bank, where appropriate, limits to the mismatch in the two shortest maturity bands. There is no overall norm, and both the management and the Bank of England might in a given case be comfortable with an institution maintaining a negative mismatch of, say, 10% of total liabilities maturing within the sight to eight-day band and a larger mismatch in the sight to one-month band. This may be because the bank enjoys a very substantial proportion of depositors whose behaviour is reliable; because it can predict with accuracy the proportion of undrawn commitments that may translate into assets over a period of time; or because the bank forms part of a financial group whose activities as a whole must be taken into account. These features mean that a negative mismatch can be offset by the presumption that the institution can customarily fund its residual requirements in the wholesale markets. Another institution may be very heavily dependent upon funds purchased in the market in a foreign currency where the same probabilities attached to the underlying assumptions do not apply. In this case the agreed maturity profile might look quite different.

With experience, it is possible for peer groups with broadly similar kinds of balance sheets to be identified. This is a matter of some comfort to the supervisor since it is not always easy to arrive at agreement with the management of an individual institution who believe that they know the bank better than the supervisor, and argue for a maturity profile which seems to the supervisor to generate more profit and less prudence that he would consider appropriate. Among any group of banks it is usually possible to find one or two whose demonstrated capacity to manage its affairs well will enable the supervisor to arrive at a view of prudent liquidity management which he may be able to adopt as a norm for the peer group. However, as we are all aware, almost every bank considers that it is justified in following policies which allow it to be both more profitable and more prudent than any other in the peer group; and I suppose we should be worried if they did not think this.

Our experience in London with the maturity profile, over a period of some years now, is that it is a very helpful measure of liquidity, and a guide to setting mismatch limits, under ordinary operating conditions for an institution. However, we have also learned that a change in the circumstances of a bank, notably those which begin to raise questions about the confidence which it enjoys in the interbank market, can transform the picture very materially. When confidence begins to be in doubt, a number of the assumptions and judgements which underlie the maturity pattern are not simply in need of adjustment but may be completely overturned at a stroke. The reliability of interbank lines and the disposition of depositors to follow previous behavioural patterns may change abruptly, particularly when their judgement is informed by changes in the published ratings which a bank is awarded by independent agencies or bank analysts. There is a discontinuity which may render the maturity ladder unreliable as a guide to the likely capacity of a bank to purchase funds in the banking or other wholesale markets. To return to my earlier metaphor, once the rumbling begins then the topography may be subject to abrupt and unpredictable change; and arguably it is already too late.

This realisation has led us in the United Kingdom to re-emphasise the concept of a stock of liquidity as a supplement to the maturity ladder. The underlying thought is that the prudent management of liquidity should not rest on an assumption that the behaviour of depositors and borrowers will always be within predictable limits; nor that banks will always be able to fund any liquidity gap by purchased money; nor that the central monetary authority may always be relied upon to provide assistance when confidence in the institution is shaken.

We have, therefore, come to the view that banks operating in the United Kingdom, whether branches of foreign banks or locally incorporated, should maintain a quantum of assets which can with reasonable certainty be readily translated into cash for use in the circumstances postulated above. We would stress that this is not to be regarded as a substitute for a full and up-to-date maturity profile of a bank's balance sheet; but rather as a complement to it and part of it. The thought is that a bank should have an interval available to it in which it may cope with an unforeseen interruption in its short-term cash flow or from a break in confidence which would have the same effect.

The Bank of England will accordingly shortly be publishing a consultation paper(1) which will propose that banks operating in the United Kingdom should hold a stock of highly liquid assets in the range of 10% to 20% of liabilities and firm commitments to provide funds within the next eight days. Following consultations with the banking association, we have arrived at a specification of the relevant liquid assets which breaks them down into two tiers, one of the highest quality and one of a slightly less certainly liquid nature. The requirement will cover foreign currency business and we will expect to see a reasonable match in the currency composition of liabilities and assets. Clearly, this raises the possibility of implications which go beyond the purely prudential and, in particular, crosses into the area of the management of monetary policy and financial markets in those countries whose currency may be involved. We are discussing these matters with the relatively small number of central banks involved.

Just as we feel that the view taken of the acceptable maturity profile must be determined bank by bank, so also we feel that the requirement to hold high quality liquidity must also have regard to the circumstances of each institution. It is for this reason that we have expressed the requirement in terms of a range of 10% to 20% although, here again, we believe it will be possible to simplify the task to some degree by identifying peer groups.

The position of branches of overseas banks

A particular aspect of the management of liquidity arises in relation to the branches and subsidiaries of overseas banks operating within a given national jurisdiction. This aspect is of obvious particular interest to us in London where there are in excess of 300 institutions whose ownership derives from countries outside the United Kingdom. This is a particularly complicated area, where our responsibilities as host supervisor are shared under the Basle Concordat with those of the country of ownership of the institutions concerned.

Our approach to this issue has to take into account the great variety of purposes for which overseas banks establish operations in the London market. These range from a single branch serving the needs of a local ethnic group in the United Kingdom to a very substantial branch network both raising sterling retail funds and acting as a principal part of a global treasury function. We must, of course, formulate our policy stance in each case in close liaison with the home supervisory authority, satisfying ourselves that that authority has a full understanding of the parent bank's liquidity management and of the London branch's role.

Where a branch relies for all of its funding on the London wholesale market in a foreign currency, and where that is accompanied by a policy of lending back to the country of origin, we take a particularly close interest. We have already identified as a particularly malign combination a heavy reliance on short-term borrowed funds and a loan book concentrating on lending at medium or long term back home. Faced with this pattern we believe it to be correct to agree limits in some detail on the structure of the assets portfolio.

(1) 'Proposals for a stock of high quality liquidity', published on 25 March 1988.

Conclusion

Let me try to come to some conclusions on this complex subject. There is little doubt that banks and their supervisors everywhere will find it necessary to review their existing approaches to the management of liquidity, particularly as they apply to the activities of international banks. Dependence on purchased funds in the wholesale markets deserves particular scrutiny.

The same arguments which have led to greater co-ordination of capital measurement and standards can be advanced in favour of similar co-operation on liquidity. The standards of liquidity have probably been declining under competitive and regulatory pressures, notably in the case of international banks; and the associated costs of restoring levels of liquidity are likely to generate pressures for comparable measures and some harmonisation of standards internationally. This process will be assisted and accelerated by the moves towards a single financial market in the European Community by 1992. However, I believe the task is inherently substantially more difficult than in the case of capital adequacy and the prospect of an agreed minimum standard is still some years away.

The adoption of a common system of measurement is probably more easily achieved and, indeed, the maturity profile approach is already employed in a number of countries. That approach allows bank managements and supervisors to choose from a number of broadly equivalent tests in seeking to establish liquidity requirements.

Finally, we in the United Kingdom see advantages in a stock of high quality liquid assets as an important element of such a requirement and consider it both realistic and practical to set it bank by bank. Where international banks are involved we are wholly persuaded that the home authority must play a full part in the process.