

Sir Andrew Large: Financial stability - managing liquidity risk in a global system

Speech by Sir Andrew Large, Deputy Governor of the Bank of England, at the Fourteenth City of London Central Banking and Regulatory Conference, London, 28 November 2005.

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1. Introduction

Much is written today about the search for yield. Much is said about the factors that underlie it: accommodative monetary policy; savings gluts; and financial engineering which multiplies the opportunities for increasing leverage. And much, too, is said about new instruments, such as those involving credit risk transfer, or new players, such as hedge funds, that trade them.

However, my main concern today is not with the search for yield as such, nor with market innovations or new players. Rather, it is with the financial vulnerabilities to which they could give rise, and what can be done to mitigate those vulnerabilities.

Because it seems to me that the search for yield also highlights some less benign aspects of today's financial system: the opacity of markets in some new instruments; the difficulty of knowing the real value of assets and contracts; reliance on models that have not been tested in the full range of economic conditions; the uncertainties over behaviour of new participants in the markets should events turn adverse; and the difficulty we have in judging just how deep markets will prove to be should a substantial number of investors decide simultaneously to try to realise their investments.

On a more practical level, there is no lack of evidence that things can and do go wrong. We have recently seen lack of operational discipline in some financial markets leading to documentation backlogs and to uncertainty over the enforceability of transfer of risks. We see more relaxed lending criteria in the LBO market, increased reliance on potentially illiquid instruments in trading strategies, and questionable quality of some IPO's. We have seen specific examples of significant downgrades or outright failures such as GM/Ford, AHBR and, more recently, Refco and Delphi.

One reaction to these episodes is that they show the market doing its work and are testimony to the effectiveness of market discipline. The fact that the financial system has coped with these problems may well also be testimony to the strengths of that system.

On the other hand, might not these episodes be a potential sign that all is not well? The question is: are vulnerabilities mounting, and will they one day crystallise when a bigger shock arrives that the market simply cannot absorb?

The fact is, we just don't know. And that is why we need to be particularly vigilant.

Such questions lead me to think about issues relating to liquidity. If a period of market stress materialises, triggered by a sharp snap back in prices, it is critical that the financial system should be able to meet a temporary increase in the demand for cash without precipitating, in the vernacular, a 'market meltdown'. Liquidity is therefore the focus of my remarks today. By liquidity I mean two things. First, institutional liquidity: the continued ability of individual financial institutions to meet claims as they fall due. And second, market liquidity: the depth of markets for the sale or loan of assets or the hedging of the risks that underlie those assets.

To set the scene, it is perhaps worth reflecting on how liquidity needs and processes may amplify the risks of instability—that is, their ability, in stressed conditions, to disrupt the functioning of the financial system generally, and the banking and payment systems specifically.

The traditional route arises from the banking system's role in maturity transformation between short term deposits and long term loans. Managing this mismatch whilst maintaining the confidence of depositors is the essence of the business of banking. However, the presence of this maturity mismatch means that individual banks are by their nature *fragile*. The *connections* between banks, and the potential for doubts about one bank to spread to others, mean that the failure of one bank to manage its mismatch can potentially put at risk the financial system more widely. Bagehot in 1873 summed up this link between maturity mismatch and systemic risk:

'Of the many millions in Lombard Street, infinitely the greater proportion is held by bankers or others on short notice or on demand; that is to say, the owners could ask for it all any day they please: in a panic some of them do ask for some of it. If any large fraction of that money really was demanded, our banking system and our industrial system would be in great danger.'

In Bagehot's time, the role of the Bank of England was to act as guardian of the reserve of bullion that underpinned the credibility of the whole banking system. The technology may have changed, but in essence the role of the Bank today is one that Bagehot would recognize. Central bank money is the ultimate settlement asset. And banks still demonstrate their ability to meet depositors' demands for repayment by holding a sufficient stock of high quality securities against which central banks—and in normal circumstances the markets—will lend. Confidence in the modern financial system is therefore underpinned by the preparedness of central banks to lend against such high quality security *without question*.

Central banks have, therefore, a keen interest in developments that affect the demand for and supply of liquidity. It is not surprising that they try to limit the likelihood of events that might lead to excessive increases in demand for liquidity or constraints on its supply, and also try to have in place the operational apparatus to respond to such developments, if felt necessary, at minimum cost.

The traditional sources of liquidity risk for banks are unusually heavy demands from depositors for repayment and from their customers to draw down pre-committed funding. Today's environment encourages us also to recognise disruption to markets as a potential trigger for such extraordinary demand. If you think about the expansion of markets in which banks participate, both as principals and as intermediaries, and the fact that at times of stress investors would be likely to place a premium on "safe" assets and ultimately on cash, then it soon gets you back to thinking about the robustness of arrangements that enable banks to satisfy unexpected spikes in cash demand, perhaps in unexpected locations. Markets rely on this in order for them to function with confidence.

2. How has the world changed?

I said that Bagehot would recognise the modern role of central banks. However, the firms that comprise the financial system are much altered since his day. So I should like to make a few observations both about how this has affected firms' own liquidity management, and crucially how the public authorities might react.

Firstly, concentration in the global financial system has increased, with a relatively small number of global firms—banks and non-banks—representing a significant fraction of the system. These firms often employ centralized liquidity management. And they are increasingly strongly interconnected, within and across borders, and via new markets for risk transfer as well as more traditional channels. Participation in risk transfer markets does more than just create new links between firms: it also creates a new potential demand on firms' liquidity in the form of margin calls. Moreover, this additional demand may be positively correlated with other liquidity risk that firms face in the event of market stress.

Secondly, there are certain features of the prevailing financial and economic environment that give us pause for thought. Market prices are at historically unusual levels: real and nominal returns on risk free assets are low and credit spreads are tight, both in traditional and structured products. It is of course hard to say definitively the extent to which today's markets are merely reflecting changed fundamentals. But it is quite possible that some investors have unwittingly taken on higher levels of risk in pursuit of what they would consider to be "normal" levels of return. And it is certainly prudent to plan for the possibility of a sharp reversion of prices to historically more normal levels (or even beyond them, given the tendency of markets to overshoot). There could be a period of impaired market liquidity during any such correction. One could imagine a number of potential catalysts for such a correction, ranging from a geo-political event to some form of major operational disruption.

The Bank concurs with the widely held view that the growth of markets in risk transfer should contribute to greater financial stability, by allowing a more efficient dispersion of risks. But the *depth* and *reliability* of the more recently developed markets in risk under stressed conditions has not yet been fully tested. Moreover, risk transfer markets can, and probably at present do make the ultimate destination of risks more opaque. This hampers our ability to assess the overall stability of the financial system, and, potentially, to react effectively in a crisis.

3. How have firms reacted to these changes?

The banking industry has, not surprisingly, responded to these changes by paying greater attention to liquidity risk management. And, as well as day-to-day management, banks have given more consideration to how they would cope with extreme or 'tail' events.

Banks have developed, or are at least in the process of developing, sophisticated scenario analyses, and are assessing the contingency arrangements that would be required to respond to these scenarios. It is certainly encouraging to observe the determination with which many banks are addressing liquidity risk, and it is at the same time noteworthy how efficiency drivers have led many banking groups to take a more centralised approach to liquidity management.

But, despite the progress that banks are making in addressing liquidity risk, the framework that underpins their contingency plans makes a number of assumptions, particularly regarding access to funding markets. There seems, for example, to be a widespread view that, whatever has happened to a firm's access to wholesale unsecured funding, it will be able to borrow secured against good collateral. Lying behind this is probably an expectation that national authorities, and in particular central banks, will be ready to provide liquidity against good collateral in the event of the failure of one or more of the markets for secured borrowing.

Banks are also giving greater thought to the impact of an extreme event on the value of collateral and the proportion of that value that can be borrowed, as well as the sale value of any assets that they might consider liquidating. The assumptions here might prove to be optimistic particularly in circumstances such as those seen in 1998, when extreme events led to one-way markets and a vicious circle in which asset price falls did not lead to increased demand but rather to further increases in supply. It is for reasons such as these that the contingency planning that firms put in place needs to be sufficient.

Banks have also placed increased emphasis on identifying potential sources of liquidity shocks. Products which entail the posting of margin, such as derivatives, can result in significant calls on liquidity.

4. Policy responses

So what gaps does this leave, and what policy responses are therefore needed on top of firms' own actions? There is scope for further work by the private sector on improving liquidity risk management. But there are also a number of issues for public authorities to address.

The preparations that firms make are influenced by regulation. When balancing the costs and benefits of measures to mitigate risk, banks naturally have regard to the interests of their own shareholders. But one of the roles of, and indeed justifications for, regulation is to ensure that firms also take sufficient account of the interests of others who would be adversely affected by their failure: their own borrowers and depositors, for example, but also the customers of other banks that would suffer losses if a particular bank were to get into difficulties. In other words, one purpose of regulation is to align *private* choices with *public* welfare maximisation.

Hitherto, public authorities have placed much emphasis on *capital* requirements as a way of achieving this reconciliation. Indeed, one reason for imposing capital requirements is to limit the risk of liquidity problems, by giving the market a level of assurance over the solvency of a firm. But this emphasis on capital has perhaps overshadowed the importance of direct liquidity requirements. Analytically, liquidity is a more difficult area. But arguably the case for prudential liquidity requirements in some form is just as strong as for capital. Liquidity cushions are a first line of defence: in times of stress they can buy time, and where organisations *are* solvent they can help to prevent liquidity problems turning into solvency ones. I will return to this later.

But besides regulation, the public authorities—specifically central banks—have a crucial role as the ultimate providers of liquidity. They therefore need to ensure that they are properly equipped to carry out this function.

Avoiding or resolving liquidity problems is not just a matter of ensuring adequate aggregate liquidity; it also means ensuring that liquidity can be, and is, distributed effectively round the system. This was illustrated by the events of 9/11, when the US money market was temporarily unable to distribute liquidity to the banks that needed it. On that occasion, for example, the Federal Reserve injected considerable liquidity, more than \$100bn, via a combination of daylight overdrafts, discount window

lending, and general market support. 9/11 also highlighted the importance of central banks being able to lend directly to solvent institutions facing a liquidity crisis. Under stressed conditions, and with the associated uncertainties, attempts by a perfectly sound bank to borrow unusually large amounts from the market, even against good quality collateral, have the potential to raise, or exacerbate, doubts about that bank's solvency. But a solvent bank that is in need of liquidity can safely reveal its need to the central bank without precipitating a crisis in market confidence; uniquely, the latter is not at risk of experiencing a run, and so will not overreact in an effort to protect its own balance sheet.

In many countries 'automatic' direct liquidity provision against pre-defined acceptable collateral is hard-wired into the operational framework for monetary policy implementation through so-called 'standing facilities'. In the UK we are broadening the range of firms to whom we can supply liquidity in this way. This implements Bagehot's prescription for mitigating systemic risk, that the central bank should as far as possible make clear in advance its preparedness to provide liquidity in stressed conditions. Referring to the central bank, he puts it thus:

'The holders of the cash reserve must be ready not only to keep it for their own liabilities, but to advance it most freely for the liabilities of others. They must lend to merchants, to minor bankers, to "this man and that man", whenever the security is good.'

The picture becomes more complex in the case of global firms that manage liquidity centrally. Such firms have liquidity needs in multiple currencies and locations. They may find it costly to hold enough liquid assets in every market in which they operate, and hence potentially face a mismatch between the location of their liquidity needs and that of their liquid assets.

In response to this several central banks, notably those in Switzerland, Sweden, the UK, and the United States, have taken steps to allow the cross-border use of collateral in some or all of their routine lending activities. Others have taken the alternative route of attempting to reduce collateral costs for banks, and hence relax potential constraints, by accepting a range of less liquid and non-marketable assets, while still controlling the credit quality of the assets involved. For example, the Eurosystem accepts a wide range of non-sovereign debt securities, including corporate bonds and asset-backed securities. The European Central Bank's proposed 'Single List' will also include certain bank loans; indeed these are already eligible in some member countries. Similarly, the Fed has broadened the range of collateral accepted at the Discount Window.

A working group commissioned by the Basel-based CPSS (Committee on Payment and Settlement Systems) in 2004 has examined whether existing arrangements would prove adequate in an emergency. It would appear that some of the *infrastructure* required to facilitate more extensive cross-border use of collateral is already in place: links between securities settlement systems, for example. Nevertheless, central banks may need to put in place more cooperative and coordinated policies, such as the establishment of a framework for information-sharing.

When risks do crystallise it is imperative that central banks, along with regulators and ministries of finance, are well prepared so that they are able to respond in an effective manner. The CPSS working group looked at preparations that are needed in order to be able to make effective use of existing infrastructure in a crisis. But it is equally important that central banks and regulators be in a position to make the decisions necessary for resolution of a crisis, both individually and, when needed, collectively.

This entails gathering data and intelligence on firms and markets, sharing it appropriately amongst all relevant public authorities, understanding the systemic conjuncture, and setting up national and international frameworks for coordination of decision making. I could give an entire speech about questions in these areas, and current and potential initiatives to address them¹. However, today I would like to return instead to the subject of liquidity regulation.

¹ One important pre-requisite is that the authorities have access to up-to-date and accurate information about financial firms, on which they can base shared assessments of the position of individual firms and the likelihood of a crisis affecting the financial system as a whole. The information needed includes, *inter alia*, a firm's group structure, capital, liquidity asset holdings, large exposures, and its involvement in markets and in payment, clearing and settlement systems. This information can be collectively thought of as a 'Fact Book' on a firm. In some countries much of this information is already available. The FSA recently published a paper outlining the information that the UK authorities collectively deem it necessary to have in a financial crisis, and asking for firms' cooperation in making available a limited amount of additional information that is not already collected on a routine basis.

The potential willingness of the authorities to supply discretionary—as opposed to routine—liquidity in a crisis is likely to give rise to moral hazard, because in the real world, faced with incomplete information, it is difficult or impossible to identify *ex ante* a ‘pure’ liquidity crisis. By, for example, relaxing normal criteria on collateral quality authorities may move from the injection of liquidity to what is effectively the provision of risk capital. Firms may then be inclined to tailor their risk-taking to their own assessment of the probability of intervention, while at the same time the incentive for firms to hold adequate buffers of liquid assets is likely to be reduced. The gap between the amount of liquidity that a firm will choose to hold, and the optimal public choice will then widen. It is not surprising, then, that in most jurisdictions firms’ liquidity management is subject to standards imposed by regulation.

Intervening in this way requires that the authorities be able to answer some difficult questions. There is the question of calibration: how much liquidity is ‘enough’ for any given firm? In other words, what is the optimal public choice of liquidity buffer? And for how long should a firm be expected to be able to survive without outside help? This is a much more difficult question for liquidity buffers than for capital, as in the case of liquidity it is not sufficient merely to analyse the structure of a firm’s assets and liabilities. The firm also has to take account of the possible ways in which its counterparties and creditors may behave in a crisis. Moreover, in a liquidity crisis, there is feedback from the actions that a firm takes to meet liquidity needs—selling assets for example—to the market’s perception of its solvency and hence to the size of those very liquidity needs. Furthermore, it is arguable that buffers should vary to some extent with the level of risk that a firm brings to the financial system. Firms that, for example, are relatively large or opaque, or have more extensive connections to other parts of the financial system might be expected to meet higher standards under such a regime.

The impact of liquidity standards on a firm’s relationship with its central bank, both in normal times and in crisis, also has to be considered. In many countries, the UK included, firms need to obtain central bank money in order to make payments to other banks in the real time gross settlement system and to settle delivery versus payment securities transactions. The ability to obtain central bank money—liquidity—depends at all times on having access to sufficient quantities of high quality collateral. And such collateral is of course amongst the best forms of insurance against liquidity problems. So the extent to which prudential liquidity standards *require* firms to hold collateral, and the precise way in which such requirements are *calibrated*, have a direct impact on the economics of their participation in payment systems and in central bank operations to implement monetary policy.

The structural and conjunctural developments that I described earlier are most material to these questions. On calibration, for example, greater inter-linkages between firms mean that the external costs of failure—the costs that are not borne by the firm itself and are therefore unlikely to be taken into account in its own planning—are greater. If markets on which firms now rely for some of their

We also obtain a great deal of additional information in the course of our own market operations, through our involvement in payment systems and other infrastructure, through our counterparties and contacts, and in other ways. Intelligence of this sort allows us to understand the environment—the products, techniques, and markets—in which firms operate and how they and the markets in which they trade may behave in times of stress. It therefore supports analysis of how stress might spread and how the authorities can most effectively respond; and it helps to identify the appropriate channels for communicating this response. But analysis from intelligence can also provide early warning of symptoms of actual or incipient stress; for example, a high degree of leverage coupled with crowded trades in markets that can be illiquid.

The authorities then have time, where appropriate, to publicise any concerns so that firms can take action to prevent the risks from crystallising, and factor them into stress tests and scenario analysis. We provide such analysis regularly in our Financial Stability Review. And were a crisis to develop, an understanding of the ‘systemic conjuncture’ is also required to enable the authorities to assess on a continuing basis the likely systemic impact, and to choose an appropriate policy response.

As well as information exchange, strong co-ordination of decision making between central banks, regulators, and ministries of finance, is likely to be essential for effective crisis management. This is true both at a domestic and an international level. A first step is for the relevant national authorities to have clear, well established, processes for decision making and for communicating externally, and to ensure that these processes are well understood by all parties. In the UK, HMT, the Bank and the FSA have a published Memorandum of Understanding (MOU), established in 1997, which sets out a high-level framework for co-operation in the field of financial stability.

Although there is no such agreement at an international level at an equivalent level of detail, a ‘Memorandum of Understanding on co-operation between banking regulators, central banks, and finance ministries of the European Union in Financial Crisis Situations’ was signed earlier this year. It is fair to say, however, that this represents only a first step.

Finally, if the authorities decide to take measures to mitigate the systemic impact of a crisis—for example through emergency liquidity injection of one sort or another—it is vital that the central bank, supervisor and ministry of finance act, and are seen to act, in a decisive and joined up way. In the UK, the MOU provides for strategic management of a crisis at meetings of a ‘Standing Committee’, the members of which are senior representatives of HMT (who chair the meetings), the Bank, and the FSA.

liquidity became fragile, then, all else being equal, firms would be more vulnerable to liquidity problems.

This argues for the authorities in all jurisdictions to review whether the liquidity standards that they currently impose are still appropriate, given the nature of firms and their activities. But globalization also means that there is a case to look again at *consistency* of liquidity standards across jurisdictions. As central banks or regulators we are each seeking to achieve a high level of soundness in our respective financial systems. But the soundness of any of the global firms that are a major part of those systems is a function of the standards imposed on the group and its major subsidiaries in many jurisdictions.

None of this necessarily argues for full harmonization of liquidity standards in the way that capital standards have been harmonized. But each jurisdiction inevitably relies to a degree on liquidity standards imposed elsewhere to ensure the soundness of potentially systemically significant firms. Central banks and regulators need at least, therefore, to come to a common understanding of what they are individually seeking to achieve with liquidity regulation. Are we, for example, seeking with such regulation to limit the likelihood of crisis, or the impact of a crisis should one arise, or both? What sort of liquidity problems are envisaged in the regulation? Most importantly, we should seek a common understanding of the dividing line between *ex ante* insurance, and *ex post* resolution.

5. Conclusion

This is my last Financial Stability speech as Deputy Governor and I would like to leave you with several thoughts.

First, I can't help feeling that it is at times such as this, when we have a relatively benign environment, that we should seek to address difficult and contentious issues of the kind I have been discussing. It is certainly true that the risk transfer markets and the financial system have coped, with remarkable success, and with few signs of instability, with the various events and shocks in recent years. But we need to be sure that we are not complacent in placing trust in the ability of the financial system to continue to absorb shocks smoothly.

Second, policy makers have found it hard to discuss lender of last resort issues because they can so quickly raise the spectre of moral hazard: by giving too many clues to their likely response to instability, policy makers fear undermining market discipline and so making crises more likely. Equally, public policy makers should recognise the distinction between clarity about processes—where transparency to my mind can only be positive for confidence—and transparency about how decisions might be reached in a particular case, where constructive ambiguity remains important as a mechanism to reinforce market discipline. On the other side of the fence, banks and financial institutions have made impressive strides in coping with these realities, but may be reluctant to move explicitly to transparent best practice standards. Maybe this is for fear of giving up competitive advantage, or maybe it is a fear that regulators might seek to impose unwelcome prescription in how they manage liquidity risks.

Third, my message today is that both public and private sectors would be wise to overcome these inhibitions in the interest of developing mechanisms for providing liquidity in a manner that is fit for purpose in today's globalised world, and recognises the new environment and systemic conjuncture. In the case of private entities, they, to my mind, could show greater enthusiasm and leadership in coming up with sets of best practice standards, in the knowledge that failure in one institution could be severely damaging for others.

I say this in the knowledge that, in the case of the public authorities, debate on all these issues is rising rapidly up the agenda, not just in London where the FSA and ourselves have a shared responsibility, but in other major financial centres as well. Progress on understanding all of these difficult issues can be made through ongoing informal dialogue amongst the central banks and regulators that are most concerned with our largest financial institutions. I am encouraged that there are a number of informal groups who are undertaking work in this area. These feed into official groups such as the Financial Stability Forum where the vital connection between the public and private sector can be made.

These are stimulating and fascinating issues, and I confidently expect them to occupy people's minds for many years to come.