

Liquidity Management

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I. Introduction

Having only recently received the capacity to pay interest on bank reserves held with itself, the Federal Reserve System has come at a relatively late stage, and in the midst of a severe financial crisis, towards the “corridor” approach to managing bank liquidity, a system which has been already operated by much of the rest of the world for many years now. Though decisions on the level of the official rate, within this corridor, are much more important than adjustments to the parameters of the corridor itself, nevertheless the latter could become a flexible and subtle further instrument. In particular, because use of this latter instrument in the USA should not be hidebound by as much previous tradition and practice, there will be a chance to employ it in the future in a much more imaginative and constructive fashion than has been done elsewhere. So, the first part of this presentation will discuss how to manage the parameters of the corridor.

During this crisis, most central banks have been steadily driven from their comfort zone of only providing liquidity to a limited set of (core) banks by lending against top-quality assets for short periods, towards lending to a widening range of financial institutions against almost any grade collateral at ever-longer maturities. This genie cannot be put back in the bottle. Central banks cannot expect in the

future to enforce good behaviour in bank asset management by some constructive ambiguity on whether to withhold liquidity assistance. Their actions have spoken louder than words. Just as it is the metier of God to have mercy on sinners, however heinous the sin, so it is the metier of central banks to provide liquidity to systemic financial institutions, however dubious are the assets on their balance sheets. And whether they can have one regime for systemic institutions and a possibly tougher regime for non-systemic institutions is a question that I shall duck. Anyhow, the second part of this presentation will review some of the resulting issues.

One reason why the asset quality and liquidity of Western commercial banks declined so precipitously between the 1970s and now was that the attempt by the Basel Committee on Banking Supervision (BCBS) in the 1980s to craft an accord on liquidity to accompany the Basel I Accord on capital failed. We need to know why that happened, so that we can do better this time. Perhaps the most intractable obstacle to recreating an international accord on liquidity is the question of the relative powers of home and host regulators in a world of cross-border banking. This is the final subject of the paper.

II. Managing the Parameters of the Corridor

The upper limit of the corridor is represented by the level of the standing facility at which banks, at their own volition, can, after due submission of collateral, obtain base money from the central bank. The lower limit is represented by the interest rate that banks can obtain on deposits at the central bank. A common, but on occasions unthinking, response is to set the upper level at a high enough distance above the mean, official target, both to be something of a penalty, in homage to Bagehot, and to encourage liquidity management and interbank liquidity markets; and then to set the lower limit, the deposit rate, at a symmetrically lower level. So, in several cases around the world, these margins have been set, often by historical tradition, at plus, or minus, some round number, often 1%, and then left there as a *constant*, irrespective of economic conjuncture, or the positions of either the banking sector as a whole, or of individual banks within it, with the central bank.

Treating these parameters as a constant would be a waste of a good instrument. Just as the spread between commercial bank deposit and loan rates, currently at elevated levels, is a measure of the cost of bank intermediation, so the spread between the parameters of the corridor is a measure of the cost of central bank intermediation. When the cost of central bank intermediation, i.e., its effective spread, falls, it will raise both the demand by commercial banks for access to central bank funding and the demand to hold deposits with the central bank. Fairly obviously, the greater the risk aversion amongst commercial banks, the less their leverage; and the more fragile and dysfunctional the state of wholesale markets, the more that central banks should encourage intermediation over its own books, and vice versa. The implication is that this spread should have narrowed as we moved from pre-crisis peace time to war-time crisis conditions. The Fed seems, from my viewpoint, to have been fully appraised of this *general* argument, and to have put it into practice, more so than some other central banks, though the Bank of England has also reduced its margins to 25 basis points.

All this also assumes, often implicitly, that the margins in a corridor system, above and below the official rate, should be symmetric. Having asymmetric margins may complicate the technical problems of keeping the overnight rate close to the official rate, but there could be offsetting advantages from an asymmetric corridor. In the exit strategy from quantitative easing, *after* the recovery has become firmly established, there could be a benefit from holding banks' deposit rates close to the official rate, while at the same time making additional borrowing from the Fed relatively expensive. Per contra, before the recovery has properly begun, and while the financial system remains fragile (as I believe still remains the case), the asymmetric bias should be in the other direction, penalising reserve buildup and encouraging borrowing from the Fed.

To some considerable extent, the reliquification of the commercial banking system in a crisis, such as now, is a desired objective, but holding deposit rates close to the official rate means that there is virtually no incentive to commercial banks to use their additional reserve balances, for example to move along the yield curve by buying short-dated

Treasury bonds. But are not central banks stuck in this liquidity trap once we hit the so-called zero nominal bound? Not necessarily; let me recommend the recent Swedish Riksbank initiative (July 2009) of charging $\frac{1}{4}\%$ on commercial bank balances held there, a negative interest rate on deposits with themselves. The zero bound is supposed to arise from the potential alternative of holding zero-interest cash, but would bank executives really prefer to hold huge piles of \$100 bills in their vaults rather than short-dated T bonds?

One constraint against taking steps to reduce the current huge hoarding of monetary base with central banks is the prior experience in 1937, when, according to Friedman and Schwartz's epic *Monetary History*, the steps by the Fed to raise reserve requirements, a premature exit strategy, drove the system back into depression. But the increase in required reserves effectively sterilised the liquidity of these deposits, because it is the buffer over such a requirement that provides the real liquidity. Putting a small interest rate penalty on deposits at the central bank, or perhaps just on those deposits in excess of some quite generous cash ratio, by contrast has no impact on their liquidity, but only provides a pecuniary nudge to do something more socially useful with base money than just sitting on it.

But some individual banks will not have been sitting on such massive piles of base money. Why should they be penalised for the actions of others? Moreover, a major problem for some central banks was that, with access to their lending upper ceiling at a penalty level, it was an obvious corollary that any bank perceived as going to the central bank for assistance must have been unable to access cheaper interbank or wholesale funds instead. There was a stigma problem built into the system. One response has been to try to eliminate transparency on this front, by hiding the existence and identities of such borrowing. I have doubts about whether such purposive official opacity would either be likely to succeed or is desirable.

An alternative approach, adopted by the Bank of England, has been to try to separate the function of day-to-day cash management, for the purpose of making the official rate effective, from the wider issue of responding to systemic illiquidity amongst financial intermediaries as

a whole. Let me quote from Paul Tucker's recent speech at the Bank of Japan's May Conference:

“During the current crisis we added to the Bank of England's Sterling Monetary Framework two instruments that are *explicitly* designed to help contain financial system stress, by providing financing against securities that may become illiquid in stressed conditions:

A Discount Window Facility (DWF) making available to commercial banks collateral swaps in which the Bank can lend UK government securities in exchange for a wide range of eligible collateral.

Long-term repos (LTRs) via which the Bank lends cash against collateral comprising a range of high-quality securities beyond the sovereign securities routinely eligible in the Bank's short-term repo operations.

For the Bank's short-term repos, eligible collateral has not been widened: It remains essentially high-quality government bonds....

The two new facilities differ from each other in so far as the long-term repos (LTRs) are for a total size determined by the Bank, whereas drawings from the Discount Window Facility are for amounts determined by individual counterparties; and in that the Bank lends cash via the LTRs, whereas we would *usually* lend securities via the DWF.”

One aspect of this is that, because in one case the Bank determines the auction size and in the other the transaction is a swap, rather than a cash transaction, the stigma effect could, hopefully, be less.

My own answer to this conundrum is to turn the Bagehot principle on its head. All official lenders-of-last-resort, whether national or international, should want all their *systemic* potential borrowers, banks in the national case, to be regularly borrowing a *small* amount from them. Such initial borrowing both greatly reduces the stigma effect *and* gives the lender closer, more continuous insight and involvement into the borrower's affairs. So, up to a point, the cost of central bank, and International Monetary Fund (IMF), intermediation should be

subsidised, not penalised. Instead, as each individual commercial bank's borrowing from, or deposits with, the central bank gets bigger, and/or longer-lasting, so the cost of such central bank intermediation should be raised against them, so that it does eventually entail a considerable penalty. I have expanded on this at greater length in my recent book, *The Regulatory Response to the Financial Crisis*, but the message for now is that the parameters of the "corridor" could and should be managed in a more flexible, subtle and intelligent way than has been generally done to date.

III. Liquidity Insurance

Failures normally occur in the first instance because of a shortage of liquidity, an inability to pay due bills, even though the underlying problem will, almost always, have been one of insolvency, whether real or just rumoured. As has become obvious, the uncontrolled failure of a large, connected, systemic financial institution can have devastating wider effects (externalities) on the broader economy. So, even if such an intermediary is (possibly) insolvent, recent experience has shown that it will generally get liquidity assistance, while a wider package of measures to restore solvency is addressed. In the course of this crisis, liquidity assistance has been extended to an ever-wider set of intermediaries, on the basis of ever-ropier collateral, for ever-longer time periods.

Up until now, the basic paradigm for such liquidity assistance has been that of standard banking practices. The central bank is the bankers' bank. When a bank comes to its central bank for assistance, just as when an ordinary private borrower goes to its own bank, the central bank should, so the theory goes, rigorously scrutinize the quality of the collateral being offered and of the creditworthiness, the underlying solvency, of the borrower. If either of these are doubtful, the central bank should turn down the loan. If failures result from such refusals, so be it; otherwise moral hazard will run rampant.

To the regret of many, that model is on its deathbed. Systemic financial externalities are, or have been allowed to become, so large that central banks have been forced to extend liquidity assistance against collateral and to prospective borrowers that, on the old Bagehot

principles, they should not have touched. The new paradigm is moving on from banking (the bankers' bank) to insurance. The central bank now effectively insures the systemic core of the financial system from liquidity shortages, as it now also insures most, but not all, stakeholders in that same core from credit, i.e., solvency risks.

So, rather than sticking to the banking paradigm, liquidity provision should now be assessed within an insurance paradigm. Almost all insurance generates moral hazard; liquidity insurance is, clearly, no exception. The answer in general has been to set premia in fair accordance with the risks being run by the insured so that the provision of insurance at least breaks even for the insurer, in this case the central bank and through it the taxpayer.

What this should then involve is a continuing, and regular, measurement of the risks that the behaviour of the insured, both individually and as a system, are imposing on the insurer, i.e., the central bank, as the ultimate provider of liquidity, and the application of sanctions on such behaviour—sanctions that become tougher as the risks worsen. Both the calculation of such liquidity risk measure(s) and the design of the appropriate form and structure of sanctions are difficult, but both need to be done, and soon.

Back in the 1980s when the BCBS last attempted this exercise, there was a general consensus that some form of maturity mismatch approach was the best available to deal with measurement issues, and probably something rather similar will be disinterred now. There are, however, two generic measurement problems that have become worse since the 1980s. The first is how to measure the liquidity risk arising from contingent claims. The example of banks being, or feeling, forced to replace asset-backed commercial paper when this was withdrawn from funding structured investment vehicles is now well-appreciated, but banks have a much wider set of contingent liabilities, for example in the shape of undrawn commitments. The second is how far to accept the reliance both of individual banks and of the financial system as a whole on wholesale funding markets. It was such reliance that led regulators, as much as the regulated, to accept the substitution of funding liquidity in place of asset liquidity. We now know that under extreme pressures, such wholesale markets

can collapse. What then are the implications for liquidity regulation? How do we decide what assumptions to make about the future availability of wholesale funding markets?

Let me digress just for a moment to ask in this context how far it has now become the function of a central bank to go beyond its role of lender-of-last-resort also to take on the task, to use a phrase coined by Willem Buiter, of being market-maker-of-last-resort. When wholesale markets collapsed and spreads exploded, the Swiss National Bank's policy of targeting the one-month rate stood them in good stead. Might there have been a case for other central banks to shift their focal target to such a longer term? It was at such longer terms that the liquidity pressures were concentrated, and such a shift would have faced this problem head-on. There are some technical problems that follow from such a move (notably in preventing contrary disturbances in shorter-term rates), but I have yet to see a proper analysis of whether moving the focus of official rates to a longer tenor could have been a beneficial response to the malfunctioning of wholesale markets. And, of course, the Fed's adoption of credit easing is a step along the same road.

But let me return to my main theme about liquidity insurance.

The problems of devising appropriate sanctions against liquidity shortfalls are no easier than the measurement issues, and for a variety of reasons have never been properly addressed by the BCBS. Their tendency has been, instead, to set guidelines, or norms, which then become minima, which not only makes the infra-minimal quantities effectively unusable, but also fails to provide any remedial measures as the buffer above the minimum erodes. Let us devoutly hope that they can do better this time. In the latest Geneva Report, by Brunnermeier et al., which I helped to organize, we proposed that capital requirements be raised as liquidity drained away. This ran up against the argument that just too much weight was being put on variations in capital requirements as the nostrum, or remedy, for all banking ills.

An alternative, recently put forward by Perotti and Suarez, and more closely in line with the insurance paradigm, is that banks should actually pay over premium payments in line with their

assessed liquidity risk to the central bank in return for liquidity insurance. The problem here is that, in the absence of any truly objective measurement of the infinite facets of risk, both the details of the measurement and the size of the necessary premium would be likely to be, or to become, political footballs. The result would most likely be underfunding during normal, good times, compounded with the belief by financial institutions that they had a right, an entitlement, to liquidity support during bad times.

One possible answer to this, which was developed by Viral Acharya and his colleagues at New York University in their book, *Restoring Financial Stability*, in admittedly a slightly different context, is to require a rather small portion of liquidity insurance support to be provided by nonbank private sector insurers, largely for the purpose of price discovery, and then to piggyback on that in setting central bank premia.

In several ways the design of appropriate sanctions against liquidity shortfalls is even more difficult than the measurement of such liquidity risk. But it was not on this account that the earlier BCBS attempt at an international accord on liquidity failed, because they never even attempted any such exercise.

IV. Home/Host Problems in Any International Agreement

Instead, a main stumbling block to the 1980s BCBS negotiations arose from the differing customs and traditions of national central banks in the provision of lender-of-last-resort facilities. One facet of the liquidity characteristics of a financial instrument is whether central banks are willing to accept it as collateral against a loan. Different central banks had different practices, both then and now, so the same asset could have a different liquidity ranking in two different countries. In the 1980s the BCBS became exhausted by the efforts to force through a common approach to capital adequacy on central banks coming from differing starting points. With the need to attain a common international position on liquidity being seen as much less pressing than for capital, any attempt to pressurise outlying central banks on this front as well was just felt to be a step too far.

I hope that continuing differences in national practices will prove less of a stumbling block on this occasion. After all, in several key countries long-standing national practices in the provision of liquidity assistance have had to be revised and extended under the pressure of crisis events. This should have promoted the view that there is not necessarily one single best way of measuring and providing liquidity, but that this may be a function of economic context, institutional structure and historical development. As a result, so long as the BCBS and Financial Stability Board authorities can agree on general principles, precise measurement may vary somewhat from country to country.

A much more pressing problem nowadays is that of home versus host control of liquidity management. Each host central bank can create liquidity in its own, but not in foreign, currencies. And one would expect the major part of the liabilities and assets of a banking entity physically situated in a country of any size to be denominated in that country's currency. So from the earliest days of concern about cross-border banking, to be precise from Huib Muller's, of the Nederlandsche Bank, first matrix in 1975, such regulation has been designated as being in the province of the *host* authority. But in the subsequent absence of any international agreement on liquidity regulation, many, perhaps most, though not all, large, cross-border international banks have become used to managing their liquidity as a single pool, transferring it around the world both with the sun and as seems best allocated by headquarters. They generally claim that this is efficient and cost-saving. But it does mean that liquidity moves in, and again out of, host countries in a daily rhythm in a way that host countries cannot control, as London found when Lehman Brothers Europe went into bankruptcy last September without a penny to its name on the premises.

Particularly with cross-border banks being international in life but national in death, and even more so when some countries ring-fence the assets of bankrupt financial intermediaries in their own countries, the adoption of liquidity regulation is likely to lead regulators in host countries to require the maintenance of sufficient liquid assets there *at all times*. This will run counter to the interests of many large

international banks and serve as a constraint, a friction, on the development of a seamless, one-world capital market. So, the tensions between the adoption of, what seems to me to be, the logic of host country liquidity control and the desire to maintain a globalised, cross-border financial system are quite apparent. How they may be resolved is much less clear. Time will tell.

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