The Implementation of Monetary Policy: The Next Attempt

From Julian D. A. Wiseman
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Dear Mr Tucker,

Rather than writing to the anonymous address given in the Bank of England's recent consultation[2], I am writing directly to you, as you are the central banker who has more experience than any other of official operations to implement monetary policy.

History

The Bank's latest consultation about the implementation of monetary policy is not the only repair attempted by the Bank in the last few years.

In 1996, as head of the Gilt-Edged and Money Markets Division, you rightly ended the intermediation of the Discount Houses. The correct course would have been to introduce a narrow overnight corridor, but the Bank's internal records show that the then Executive Director Markets knew of but was unwilling to take that larger step—a blatant failure of imagination. Even he anticipated that one day it would happen, but saying, in that Bank of England cliché, that the time was not yet right.

After his retirement and the arrival of the new Governor you were at last able to give, on 28th July 2004, an admirable *mea culpa*[3]:

> *There are three types of problem with the current framework. First, it is overly complex… Second, when the MPC is expected to change rates, the ultra-short maturity rate structure 'pivots' in a rather perverse way, … For all but the initiated, this makes it harder to decipher expectations from ultra short-term money market rates. And third, the overnight rate is highly volatile by international standards – from day to day, and intra-day …*

That led to a new set of reforms, which have, in one sense, worked excellently. For the first time in decades the Bank of England's implementation of its own monetary policy has not been obviously worse than that of other central banks. Since 2005 the Bank of England's data has been similar to that of the European Central Bank, and better than that of the Federal Reserve. Given where the Bank was before that reform, that is a very real achievement.

So now that you've caught up with the pack, let us look around and ask what the pack is doing in common.

What? How well?

Central banks use variations on a two-account model of implementation. Commercial banks are the customers of the central banks (the national government and foreign central banks not being relevant for these purposes). Commercial banks have a reserve account with the central bank, and that reserve account cannot be arbitrarily overdrawn. A typical rule is that it must, on average over a particular interval of time called a reserve period, have at least x units of money, where x is a non-negative number chosen by some rule or, in the UK, by the commercial bank itself.

In most countries the sum of the x's is more than the banks have between them, so they must borrow from the central bank. They borrow in what can be called an open market account.

[1] This letter is also published at and via www.jdawiseman.com/papers/finmkts/paul_tucker.html

[2] *The Development of the Bank of England's Market Operations: Consultative Paper*, 16 October 2008, www.bankofengland.co.uk/publications/news/2008/071.htm

[3] *Managing the Central Bank's Balance Sheet: Where Monetary Policy Meets Financial Stability*, 28 July 2004, www.bankofengland.co.uk/publications/news/2004/086.htm

Different central banks have differing ways of lending, and most have multiple ways: for a short period of time at the policy rate, for shorter periods of time at a penalty rate, for longer periods at a market rate. And these loans are against different sets of eligible collateral. The rules are complicated, and vary from central bank to central bank, and have varied over the years.

And yet it hasn't worked. Even a year into the credit crisis, despite the central banks having changed the positions of these various levers multiple times, the price of short-term secured money frequency still drifts or jumps away from the policy rate.

Why is the implementation of monetary policy so broken?

Between the major central banks many of the possible settings of these levers have been tried, and found wanting. There is a lesson in this—please be willing to see it.

The lesson is that the two-account model doesn't work. No setting of the many levers can make it work well over a range of market conditions. This is because it is trying to achieve two things that cannot both be true all the time.

- It is trying to make it sufficiently easy for banks to access central-bank facilities that rates don't go too high, and sufficiently easy to make a remunerated deposit at the central bank that they don't go too low, and both sufficiently easy that market participants believe that rates will stay near target;
- It is trying to make it sufficiently difficult for banks to deal with the central bank that they are compelled to deal with each other.

From the Bank's handbook entitled *Monetary Operations*[4]:

> *... over-reliance on central bank intermediation can hamper the development of active secondary financial markets. ...*
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> *Most central banks are reluctant to operate in both directions (ie to borrow from and lend to the banking system) on the same day, fearing that it could inhibit the development of the commercial money market ... [To promote] an active secondary financial market, the rates used on both facilities should be sufficiently penal so as to discourage banks from seeing the facilities as an easy alternative to the interbank market.*

And, even if a central bank could get the balance right during ordinary times, a slight change in the ordinariness of the times would upset the balance.

In turn this wish to create an inter-bank money market, is driven by a false concept: the idea that there is or can be a 'market' in overnight secured money.

What is a 'market price' for short-term secured money? Let us return to elementary economics: under various assumptions, mostly true, a market discovers the price that maximises the sum of the producer and consumer surpluses. That is, the market price is the price that maximises the producer profits plus the consumer profits. And the Old Lady is making it difficult for banks to access money, so that there is inter-bank trading that then discovers a clearing price, a 'market price', which is actually a price that was set by a committee! This is a pretend market, a Potemkin market—all appearance and no function.

Mr Tucker: for many decades the Bank of England has spoken regularly with her counterparties. When you have had these conversations, you hear how the Bank's counterparties reason about trading short-term secured money. Has their reasoning focussed on some sense of true value? Or has it focussed on the central bank's operations, and other players' interactions with those operations? I used to work at the Bank, and had the task of

[4] www.bankofengland.co.uk/education/ccbs/handbooks/ccbshb24.htm

talking to the counterparties, so I know, and I know that you know. But will you admit, ideally publicly, that their reasoning has always been about operations, and that any sense of value, whatever that might mean, is not even considered. And please, will you see the consequence of that?—there is no socially useful output price from whatever you deign to call a 'market' in overnight secured money. Instead there is a game, the desired answer and the rules being set by the central bank. Trying to promote the existence of this non-market holds no advantage.

Before we can come to how the BoE should implement policy, it is necessary to elaborate on another ineffective concept prevalent among some central bankers: *reserves*. Reserves seem to be monies lent by the central bank to a commercial bank, traditionally for some period of time in excess of a day, that are then deposited back with the central bank. This round-trip guarantees that the commercial bank has access to some money, and thus reassures an old-fashioned regulator of its solvency—reassures, not guarantees. Reserves are money borrowed and lent by a commercial bank just to prove that it has access to money. So let's extend the concept to something more useful: let's redefine *reserves* to be money on deposit with the central bank, **or any securities against which the central bank will lend at a short-notice non-penalty non-stigma actually-usable lending facility**. This does the same job: *reserves* then become that which allow outgoing payments, but this extended definition greatly simplifies the central bank's operations.

Perhaps an analogy would help. The authorities used to target a volume of money—the exact choice of monetary target being a movable feast. But the desired consequence, measured in prices, was imperfectly connected to the size of the money supply. So, eventually, central banks started directly targeting prices, or rather, their rate of change. This has worked extremely well. Even the report[5] you co-authored at the BIS says that the linkage between the reserves you target and the price of inter-bank loans is "unpredictable".

> *Financial turmoil may give rise to two distinct developments that can each make it more difficult for central banks to keep the relevant interest rates near their policy rate targets: first, there may be unpredictable shifts in the aggregate demand for reserves; second, there may be occasions on which a central bank needs to extend large amounts of credit but at the same time keep the net aggregate supply of reserves consistent with its policy rate target.*

So stop messing around with reserves—an artificial concept weakly connected to the price of inter-bank loans—and go directly to the interest-rate price that you target.

How should it be done?

So how should it be done? As argued in *The pretend market for money*, Journal of Central Banking, August 2007 (fortuitous timing!), the problem is made much easier by setting aside the bad concepts of reserves and of a market in overnight secured money.

> **Ask:** Each commercial bank should have a pre-agreed secured line of credit with the BoE, commensurate with the size of the bank's GBP business—for the largest, say [£20 billion][6]. And, against good collateral suitably haircut, each bank may borrow up to this amount at the policy rate, one day at a time, merely by ending the day overdrawn in the payment system. No active steps need be taken; no permission need be sought—the night is merely what happens after the day.

[5] ¶5.1, *Central bank operations in response to the financial turmoil*, www.bis.org/publ/cgfs31.pdf

[6] Square parentheses are indicative numbers: correct to within half an order of magnitude, but further reasoning by the central bank might result in an improvement.

> **Bid:** And, to prevent rates going too low, each commercial bank would be allowed to deposit with the BoE. The first [£5 billion] of such deposits (proportionately less for those with smaller lines) would be remunerated at the BoE's *deposit rate*, which should equal something like Minimum{ policy rate–[10bp], policy rate×[0·98] }; the excess over this limit being 'remunerated' at Minimum{ policy rate–[100bp], 0% }.
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> **Collateral:** All loans by the Bank would be collateralised. The best collateral, with a very small haircut, would be £-denominated bonds issued by the UK and by ≥AA– governments and supranationals. Debt of weaker non-private entities would have a deeper haircut. Debt in USD or EUR would have an extra [12½%] haircut; debt in any other non-GBP currency would have an extra [15%] haircut[7]. Private-sector collateral, however good, would have a haircut of at least [25%], and would need prior clearance from the Bank. The Bank would charge a one-off fixed cost, say [£50,000], to review and choose a haircut for a not-yet-allowed private-sector debt instrument that is not actively traded among multiple institutions.
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> **Counterparties:** as now, the Bank should aim for a wide set of counterparties. Any bank, rated at least [A], regulated in a country rated at least [AA], that pays a fee of [£20,000] per month for the privilege, can be a counterparty (the fee being designed to weed out small non-£ banks with little genuine need for BoE facilities). The Bank then assigns a secured credit limit commensurate with the scale of that commercial bank's typical dealing in GBP markets, the maximum remunerated deposit being [one quarter] of the credit limit.

It is simple; it would work; but it would cease to promote the existence of a Potemkin market; and also but, it would change the definition of reserves to something nearer their function. Because it operates one day at a time, it does not require complexity to avoid an assumption that rates change only between reserve periods; and even the end of the day becomes a non-event.

The Bank's consultative document[2] rebuts a scheme that is superficially similar, but far from the same. Indeed scheme (c) in Box B appears to be a straw man: similar ideas, made worse, and then rebutted.

- Non-zero bid-ask spread. The Bank rightly says that a zero bid-ask spread would mean that transaction sizes become very large. Approach (c) is indeed flawed; there should be a non-zero bid-ask spread.
- Finite credit limits. The Bank hypothesises unlimited lending to each counterparty. But allowing each large bank to borrow up to £20bn ensures that the system-wide limit is effectively infinite, but restricts the per-bank credit risk to which the central bank is exposed. Approach (c) is indeed flawed.
- The Bank writes that "allowing banks to borrow … against a wide range of lower-quality collateral at no penalty …". Wrong—there would be a penalty: steep haircuts. The Bank would not even need to aim for 'fair' haircuts: private-sector assets would have a minimum haircut of [25%], effectively penalising their use by at least that proportion of the Libor–repo spread.

[7] Imagine that a large Australian bank has borrowed £ from the Bank of England against AUD collateral, and then goes bankrupt. Central-bank *politesse* would, for a month or few, prevent the BoE from being seen to be selling those securities for AUD cash, and prevent the Bank of England from being seen to be selling the AUD for GBP. Over those few months, how far might the bank's insolvency cause the Australian dollar to fall against the pound? It is hard to know, but 15% is not an extravagant estimate. For the USD and EUR, which have larger economies with more banks, a slightly smaller estimate might be fair, say 12½%. If commercial banks find these haircuts uncomfortably large, excellent—they should consider themselves incentivised to provide GBP-denominated collateral.

- The Bank writes that "would likely be very resource intensive for the Bank, because firms would be transacting with the Bank throughout the day every day against a wide range of instruments". But switching to a **passive** one-account narrow corridor removes all the transactions. Daylight overdrafts would automatically become overnight overdrafts, without any active dealing with the Bank. So, to the contrary, it would greatly reduce the intensity of usage of the Bank's resources.

Whose responsibility is liquidity management?

The consultation's[2] ¶19 hints at a different criticism of this crisper implementation of monetary policy.

> *Although the central bank provides liquidity insurance to the banking system, it would be imprudent for banks to rely on that except for short periods or in stressed circumstances. Liquidity management is a major responsibility of the banks themselves. In the normal course of their business, they should insure themselves against liquidity risk in private markets — for example, by holding a stock of assets that can unquestionably be exchanged readily in the financial markets for cash in anything other than the gravest market distress;*

In different senses this is both entirely right and entirely wrong. It ignores the fact that liquidity is whatever the central bank deems it to be. Once, 'liquidity' was gold. Then Bank of England notes became exchangeable for gold, and such notes and deposits at the BoE became 'liquidity'. And 'liquidity' could become securities against which the central bank will lend money. Yes, liquidity is the responsibility of the commercial banks, and they will still need to monitor it and hold enough. But its definition should change to one based on collateral—and that definition is entirely in your hands.

Complexity

Please Mr Tucker, re-read your own description of the Bank's current operations, and your proposed changes. Then re-read your own speech[3] in which you criticised the previous system for being "overly complex". Mr Tucker, do you see a family likeness? The complexity is caused by attempting to patch a bad model: a better model would not only be better, it would be simpler—answering your own criticism.

So now let us turn to the narrower questions asked by the Bank in its consultation about tweaking the current system.

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1 (Para 80) Do participants consider that periodic publication of average usage of the Bank's Operational Standing Facilities will help to avoid stigma in using the facilities?

(i) Would daily publication deter use? How great a delay would be optimal?

(ii) Now that banks have experience of reserves averaging, will reduced disclosures of information relating to aggregate reserves balances materially affect the management of their own reserves or their participation in Open Market Operations?

Because banks now have experience of reserves averaging, they might be able to guess when counterparties use any stigma facility. Eventually, possibly quite soon, there will be a rumour that somebody has. The rumour might even be true. The Bank will be unable to deny it. The press will phone each of the major players in the sterling market, most of whom, perhaps all

bar one, will deny it.[8] Perhaps the Treasury Select Committee might ask. It is not obvious that getting this wrong in secret will be much less embarrassing than doing so in public. And if, soon after using a secret stigma facility, a commercial bank goes under or is rescued at the expense of a country's taxpayers, the Bank's position would be even more uncomfortable.

The only effective way to de-stigmatise use of the corridor's upper bound is for it to have a non-penalty rate: that is, the policy rate, plus nothing, minus nothing, neither plus nor minus any extra terms or conditions. And once you accept that, other at-policy supplies of funds can wither away, and we are several steps closer to a narrow passive corridor.

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2 (Para 87) The Bank would welcome comments on the proposal to set the range around reserves targets in normal circumstances, when resumed, at ±5%.

(i) In particular, what effect might it have on banks' decisions on reserves targets in normal conditions, and in stressed conditions?

(ii) Is there support for the Bank's plan to maintain the recently increased maximum limits on reserves targets at the higher of £2.5 billion and 5% of Eligible Liabilities?

The wider the range for banks' reserves, the easier it is for the banks. That gives an incentive to target high. Then to achieve that high level, they need to use lots of collateral. So it takes £43bn+£29bn+haircuts of collateral to lend £43bn to the system. That is a needless drain of collateral.

This problem could be lessened if the reserves range was expressed as a percentage of the Eligible Liabilities, rather than as a percentage of the reserves target. This would remove at least some of the incentive to target high levels of reserves.

But this patch introduces yet another wrinkle of complexity.

(Para 94) What impact would moving to variable-rate auctions have on counterparties' likely participation in short-term repo OMOs?

(i) What impact would there be on participation in short-term OMOs if any such variable-rate auctions were conducted at a uniform price, rather than on a pay-your-bid basis?

(ii) Would signals be read into short-term OMO results?

In ¶91 the Bank has correctly diagnosed the problem, but not the cure.

> *The current fixed-rate format has one potentially undesirable consequence. In an OMO to supply reserves, counterparties bid for a quantity (at Bank Rate). Given the amount of reserves each counterparty actually desires, the size of their bid is determined by their expectation (or guess) as to how much other counterparties will bid for. That can set up a dynamic where, from week to week, the extent to which a short-term repo OMO is covered is on a rising or falling trend. If, for example, a counterparty thinks its peers will bid for much more than they in fact desire, then it too must do the same in order to be allotted roughly what it actually wants. If the cover ratio is on a declining dynamic, that can potentially lead eventually to an uncovered OMO*

There is a much simpler solution: when the Bank offers OMOs, and demand exceeds what the Bank wishes to supply, bids should be filled up to an absolute quantity of money, rather

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[8] The Independent, 31st August 2007:

> *The refusal to name Barclays and the technical reasons why it was forced to borrow unnecessarily unsettled currency markets yesterday as well as causing speculation to run riot over who the guilty party might be. The last time it happened, rival bankers freely named Barclays as the miscreant. This time they were under strict instructions from the Bank of England not to comment, but when did that ever stop the free flow of gossip in the City? By tea-time everyone knew.*

The Bank of England does not have enough control to compel all market participants to silence, and certainly not enough to rely on being able to do so.

than as a proportion of what was requested. So the Bank would announce that "each bidder will receive the lesser of the amount requested and £z million". Under such rules, whatever others' expected behaviour, each bank's optimal strategy is to ask for what is wanted and not more.

In theory, banks determined to game this rule would create a series of shell banks, each of which bids separately. In practice, the Governor's eyebrows are still sufficiently frightening to deter that type of mischief.

Summary

Currently, the implementation of monetary policy is built around a broken model.

There is no true market in short-term secured money; there is only a game with the rules and desired outcome being chosen by the central bank.

Reserves are an artificial central-bank fiction, not a formalisation of a natural thing.

So stop targeting reserves: just make a price in overnight secured money.

— Julian D. A. Wiseman
New York, November 2008