Paul Fisher: An unconventional journey – the Bank of England's asset purchase programme

Speech by Mr Paul Fisher, Executive Director for Markets and Member of the Monetary Policy Committee of the Bank of England, based on a presentation to contacts of the Bank's Agency for the South-West, Stonehouse, Gloucestershire, 11 October 2010.

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In March 2009 the Bank of England's Monetary Policy Committee (the MPC) embarked on an "unconventional" journey. Having cut Bank Rate to an historic all-time low of just half of one per cent, the MPC initiated a programme of asset purchases financed by the issuance of central bank reserves – commonly known as "Quantitative Easing" or QE.[1] To date the Bank, in line with MPC decisions, has bought £200bn of assets, equivalent to some 14% of UK annual nominal GDP.

In this talk, I would like to briefly recap on why we started the QE programme and how well it has worked. I then want to explain some of the details behind why it was done the way it was and some technical details on what we plan going forward. Let me be clear upfront that the purpose of this is to share some of our broader thinking about the asset purchase programme, not to drop any hints about the future direction of monetary policy.

Why we did it and how well it worked

The global financial shock associated with the collapse of Lehman Brothers and AIG in September 2008 triggered a sharp and synchronised downturn in the world economy. In the UK, GDP fell nearly 4% in 2009 H1 alone, and by the end of that year was some 10% below where it would have been, if growth had continued at its previous trend. This was one of the largest falls in output ever recorded in the UK.

At its March 2009 meeting the MPC cut Bank Rate to just 0.5%, the lowest level in the Bank of England's 300 year history. While that represented a significant loosening of monetary policy, the MPC agreed that more stimulus was required to mitigate the risk of depression and deflation.

Given that Bank Rate was close to its lower-bound, the MPC decided to increase the supply of money in the economy directly, by embarking on a programme of asset purchases, financed by the creation of central bank reserves (QE). This largely took the form of purchases of UK government bonds – "gilts" – but included small purchases of corporate bonds and commercial paper undertaken in order to improve conditions in those markets. I won't say any more about the latter today.[2] While the form of this policy was "unconventional", the ultimate goal was identical to any normal reduction in Bank Rate – namely to stimulate nominal demand in the economy, and hence help the MPC achieve its remit of targeting 2% CPI inflation. The UK was not alone in adopting unconventional measures. Both the Federal Reserve Board in the United States, and the European Central Bank undertook a range of alternative measures too. Although the precise nature of the

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[1] In the central bank community, asset purchases are known as an example of an "unconventional" monetary policy.

[2] See Fisher (2010) "The corporate sector and the Bank of England's Asset Purchases" available at http://www.bankofengland.co.uk/publications/speeches/2010/speech423.pdf .

programmes differed from country to country, all three central banks saw their balance sheets expand, funded by an increase in commercial bank reserves.[3]

At the time we started the asset purchases, it was far from clear how successful the policy would be. None of those involved had ever personally experienced a financial crisis as big as this, nor a recession so deep. And no one had direct experience of conducting a major asset purchase programme in the UK. In the press and amongst other economic commentators there was a lot of scepticism expressed about the likely efficacy of the policy.

It is of course, extremely difficult to know what would have happened in the absence of the asset purchase programme; not least because Bank Rate was at a record low and because other, major central banks also loosened policy sharply. There might never be agreement on a precise quantification of its effects but my own view is that the asset purchase programme was extremely successful in meeting its immediate objectives.[4] In particular I would pick out the following points which were all consistent with the various channels through which QE can work:

- Broad money growth, although anaemic, did not fall by as much as should have been expected given previous contractions in nominal GDP growth (Chart 1);
- Analysis by some of my colleagues[5] suggests that asset purchases may have lowered long term interest rates on gilts at 5–25 years maturity by around 100 Basis points relative to what would otherwise have been the case;
- Demand for risky assets increased: spreads on corporate bonds fell markedly, and issuance of both corporate bonds and equities picked up to record rates in 2009 (Chart 2 and Table 1);
- Inter-bank borrowing rates fell back sharply, most likely because significant increases in commercial bank reserves reduced the need for banks to borrow from each other in the inter-bank market. For example, three-month sterling LIBOR[6] rates fell from over 2% in late 2008 to under 1% during the course of 2009 (Chart 3). That was potentially a very important supportive step as a good proportion of businesses in the UK had floating rate loans which were linked to the LIBOR rate.

GDP stabilised by the end of 2009, and grew at close to trend rates in the first half of 2010. The prospect of deflation, which had been a hot topic during early 2009, now seems much less likely. Indeed, press commentary through 2010 has instead mostly been focused on the elevated rate of CPI inflation (which reflects the temporary impact of a series of short-term price level shocks).[7]

Why we did it the way we did

Although QE was an “unconventional” monetary policy operation, it was not totally without international precedent, having been tried most notably in recent times by Japan. The Japanese programme is generally considered to have been a mixed success at best. Such a judgement is perhaps unfair but there were a number of lessons to be learned from their

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3 For further discussion, see Cross, Fisher and Weeken, (2010), “The Bank’s Balance Sheet During the Crisis”, *Quarterly Bulletin*, 50, 1, pages 34–42.

4 See Benford, Berry, Nikolov and Young (2009). “Quantitative Easing”, Quarterly Bulletin, 49, 2, pages 90–100.

5 Joyce, Lasaosa, Stevens and Tong (2010). “The Financial Market Impact of Quantitative Easing”, Bank of England Working paper number 393.

6 London Inter-Bank Offer Rate – see http://www.bbalibor.com.

7 For more discussion see Fisher (2010), “Why is CPI inflation so high”. Speech to the Merseyside Young Professionals, June. Available at http://www.bankofengland.co.uk/publications/speeches/2010/speech438.pdf.

experience and those acted as a backdrop to our own operations. In the remainder of this speech, I want to discuss how we structured the UK's asset purchases.

One aspect of our policy design for QE was to act decisively to prevent the risk of deflation. In Japan, although their programme of outright purchases of government bonds (JGBs) amounted to some 13% of nominal GDP, those purchases were conducted over a period of 5 years (2001–2006). And they only began after deflation had already been observed. It is possible that this dampened the impact[8] and other policies were being pursued at the same time. In the UK we conducted the purchases in similarly large size (14% of GDP) but relatively quickly (over 10 months), to ward off the threat of deflation rather than as a response to it.

A second aspect of the design was to target our purchases at assets held by the non-bank sector. The proposition is that, by buying gilts from pension and insurance funds (for example), those asset managers would have more cash in their portfolios than they desired, and would be incentivised to use that cash to invest in other, more risky instruments such as corporate bonds and equities. That "portfolio rebalancing" channel is thought to have been largely absent in Japan, where most of the Japanese government bonds purchased were held by the banks, which in turn used the proceeds to directly de-leverage without obviously increasing the demand for other assets (although the purchases may have had an impact through other channels).

Buying assets held by non-banks was relatively straightforward in the UK. At the time, insurance companies and pension funds were the largest category of holders of gilts in issue. Although commercial banks act as market-makers for gilts, and were thus the immediate conduit for the gilt purchases, they typically held only a very small amount on their own balance sheets as part of their liquidity portfolios. Market-makers had to source gilts in the market before selling on to the Bank. Moreover, because the banks' own liquidity holdings were generally very short-dated, we were able to target our purchases by restricting them to be longer-dated: initially we only bought gilts over 5 years maturity.[9]

We were also conscious of the pressures on pension funds and their need to match longdated liabilities by buying index-linked and longer-dated nominal gilts. Real yields and ultra-long nominal yields were already being driven to low levels by that demand. Hence, we restricted the Bank's purchases to nominal gilts only and initially capped the maturity at 25 years. The latter restriction was later relaxed as the purchase programme expanded.

In order to deliver the high-level policy objective of the MPC to inject extra money into the economy, there were a number of operational objectives for Bank staff. First we wanted to make sure that we were actually able to buy the targeted quantity. There were market participants who told us that this would not be possible as the asset managers would not be able to move away from their benchmark holdings (the initial target being £75bn). Once the programme was announced, the Bank took steps to proactively discuss our operations with market participants, to allay that initial scepticism. In the weeks that followed the announcement in March 2009, we called in our contacts at the Gilt-edged Market Makers and many of the larger asset managers, to explain the operations and to encourage them to participate. The market collectively responded very positively, and the total value of offers exceeded the targeted purchases in every auction undertaken.

A second operational objective was to ensure that purchases were at a fair market price. We had to consider this against the backdrop of a heavy UK Government issuance programme: we were alert to the risk that market participants might buy direct from the Government's

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[8] For example, on timing see Shirakawa (2010) Uniqueness or Similarity? Japan's Post-Bubble Experience in Monetary Policy Studies. Available at http://www.boj.or.jp/en/type/press/koen07/ko1009c.htm.

[9] Subsequently relaxed to 3 years, once the Bank started to hold more than 70% of some of the gilts in issue.

Debt Management Office (DMO) and attempt to sell the same gilts to the Bank at a higher price. The first mitigant was that the MPC set a targeted rate of purchases initially three times faster than the DMO were issuing. In addition we incorporated several features into the design of the operations:

(i) We designed the operations as competitive (reverse) auctions that would deliver a clearing price close to the market.

(ii) We offered to buy from a bundle of 8–10 individual gilts in each operation not just a single stock at a time. The selection of which gilts we then bought depended on the prices offered. In that way, the purchases were less vulnerable to a "squeeze" in any one particular gilt.

(iii) We eliminated from the operations any gilts which we knew the DMO were about to issue or had issued in the previous week.

Maintaining the programme

I don't want to imply that implementing and maintaining our programme of asset purchases was straightforward operationally. Far from it. For example, the gilt market became somewhat more dislocated as the Bank accumulated a large percentage of some of the particular gilts in issue. To alleviate stress in the market, in August 2009 we started to lend out, via the DMO, a proportion of the gilts the Bank had bought, in exchange for others that had readier availability.[10] The market responded rapidly to that development and, towards the end of the £200bn programme, some contacts were telling us that gilt market liquidity had actually improved relative to March 2009.

One small point to clear up in relation to maintaining the programme is whether we should be re-investing the interest receipts earned on the gilts. In the United States, the Federal Open Market Committee recently decided that, to maintain the effectiveness of their asset purchases they needed to re-invest the proceeds from maturing assets and interest receipts. That reflects the fact that in large part they purchased (pass-through) mortgage-backed securities where, in addition to receiving coupon payments, a proportion of the underlying assets are constantly maturing or being pre-paid. Absent a re-investment programme, and making assumptions about pre-payment rates, the stock of assets in the US programme might have declined at a rate of around 17 ½ % pa.

In the UK purchase programme we bought nearly all gilts[11], with at least 3 years to maturity. The earliest gilt redemption won't occur until the second half of 2012. We are receiving dividend payments and those have currently cumulated to a value around 5% of the total stock of purchases.[12] These receipts were anticipated, are currently held in the Fund and will contribute to repaying the original funding of the programme. A good argument can be made that, to keep the monetary stimulus of asset purchases constant, this cash should be re-invested in more gilts. We have taken the view that such fine-tuning is an unnecessary complication at this stage. If the MPC want to undertake further purchases, it would be straightforward to simply buy more gilts financed by issuing commercial bank reserves.

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[10] It was important that the gilts were not lent against cash, as that would have undone some of the intended impact of the initial asset purchases.

[11] The 3 month commercial paper purchased had nearly all matured by the end of the programme, and had already been largely replaced by additional gilt purchases.

[12] The cumulated dividends are not the profits on the portfolio, even before funding costs. Depending on such factors as the yield curves at the date of issue and purchase, and the maturity of the gilts; the dividends and market prices of the gilts are connected. See the DMO website for more information on changes in gilt prices: http://www.dmo.gov.uk/documentview.aspx?docname=publications/investorsguides/pig201204.pdf&page=investor_guide/Guide.

Eventual exit strategy

At this time, it is not clear whether the next step with the asset purchase programme is most likely to be to sell the assets back or to buy more. The Bank is prepared for either but it might be particularly helpful to set out in advance a few thoughts on the eventual exit strategy.

After purchasing £200bn of assets in just under a year, the MPC paused its programme of asset purchases in February 2010. The bulk of the medium-term impact from the asset purchases should come from the stock of purchases not the flow. There will be approximately £200bn extra money stimulus in the system, until the MPC decides to withdraw it (or to increase it).

When the time does come to unwind the purchases, the MPC will face a number of difficult decisions. First, it will have to decide at what point monetary policy should be tightened. That decision will, as with any decision to expand the purchases further, be judged on a month-by-month basis, taking into consideration developments in the economy, and the outlook for our mandated target, CPI inflation. As the Governor said in June[13], when the MPC does want to tighten policy, it is most likely to raise interest rates first. Gilt sales would be started later and conducted in an orderly programme over a period of time. That would leave Bank Rate as the active or "marginal" instrument of monetary policy.

Second, the MPC will have to decide how fast to sell the gilts. Again, that would depend on the outlook for inflation at the time, so we cannot commit now to any particular scale or pace. But it is not in the interests of the UK economy to generate unnecessary volatility in the gilt market. We will therefore be working closely with the DMO[14] so as to plan any extra sales operations that would be needed, with the intention of creating minimum disruption to the market consistent with meeting the MPC's desired exit path.

A portfolio of £200bn of gilt purchases has a market value which constantly varies as market prices change. Currently there is a large "mark-to-market" positive accounting position, given the increase in gilt prices since the programme ended. But for the public sector as a whole such fluctuations wash out: the (gilt) assets held by the Bank are the liabilities of the Government and fluctuations in the value of one exactly offset the other in terms of the public sector's notional balance sheet. Nevertheless, once all the assets have been sold, the Asset Purchase Facility may end up with a cash deficit and I want to make a few points about that possible outcome.

In conducting the buying operations, it was in part an intended policy objective that we would push up gilt prices and hence lower long-term interest rates. When we sell the gilts back to the market, we will be tightening policy by pushing up on interest rates and hence necessarily making gilts cheaper. The net effect will depend on the path of interest rates relative to those expected at the time of each buying operation but, given the policy objective, the result of the sales programme could easily be a cash deficit. But I want to emphasise that such an outcome would not mean that the public finances have been made worse off. The ongoing dynamic effects of the programme will have been to make it cheaper for the Government to issue its debt in the interim. More importantly, over the lifetime of the programme, it would have delivered great benefits to the public purse by stimulating the economy and avoiding deflation: the increase in taxes received as a result of higher nominal GDP should be an order of magnitude larger than any financial deficit on the purchases themselves. To genuinely assess the impact on the taxpayer, one would have to take these and other factors into account. The counterfactual story will never be known precisely but the

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[13] Speech available at http://www.bankofengland.co.uk/publications/speeches/2010/speech437.pdf.

[14] The DMO's objectives include: "to conduct its market operations, liaising as necessary with regulatory and other bodies, with a view to maintaining orderly and efficient markets and promoting a liquid market for gilts." See page 31, "Debt and Reserves Management Report, 2010–11", HMSO, March 2010.

scale of the boost to the economy means that the all-round financial benefits for the public finances should far outweigh any cash deficit that might be left at the end of the programme.

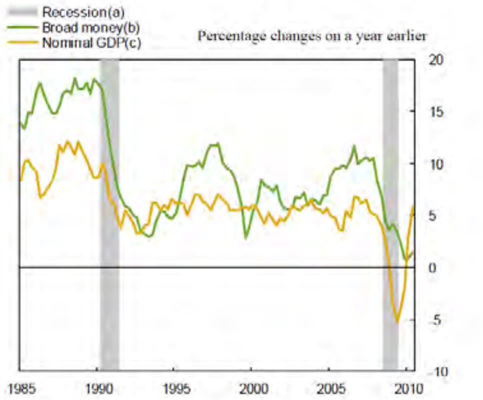
The gilt sales programme will not be the only technical issue surrounding an exit from unconventional policies. The Bank is also likely to re-introduce its reserves averaging framework for commercial bank reserves, for example. That will give the bank the ability to evaluate and then drain out any excess liquidity in the system. Unlike the US, we do not need to develop new techniques to drain cash. The Bank can do that, for example, by issuing one-week Bank of England bills as it did in 2008/09.

Conclusions

In this speech, I have commented on why the asset purchases were undertaken and how well they worked. I have described some of the complicating factors in designing, implementing and maintaining the operations. Finally I have covered some of the issues we will face when we eventually come to sell the assets – noting that it is possible that we yet might purchase more. The unconventional journey is not over yet!

CHARTS & TABLES

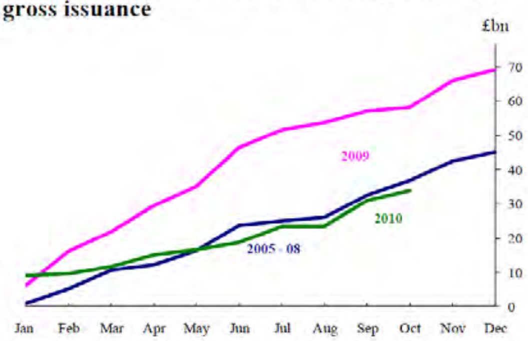
Chart 1: Broad money and nominal GDP



(a) Recessions are defined as at least two consecutive quarters of falling output (at constant market prices) estimated using the latest data. Recessions are assumed to end once output began to rise.
(b) The series is constructed using M4 growth prior to 1998 Q4, and growth in M4 excluding intermediate OFCs thereafter.
(c) At current market prices. The latest observation is 2009 Q4.

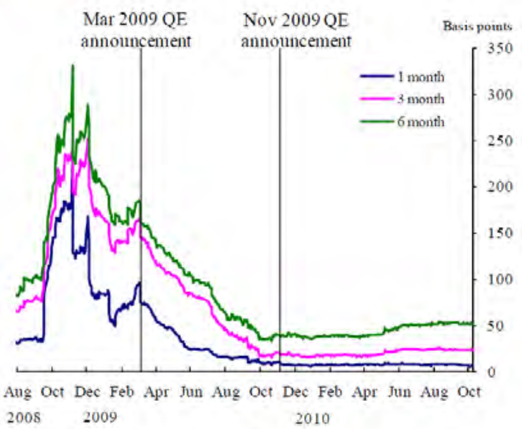
Source: Bank of England May 2010 Inflation Report (Updated October 2010)

Chart 2: Cumulative UK PNFC corporate bond gross issuance



Source: Dealogic and Bank calculations

Chart 3: Sterling LIBOR - OIS



Source: Bloomberg and Bank calculations

Table 1: PNFCs' equity and debt issuance[(a)]

£ billions

	Averages		2009		2010	
	2003–08	2009	Q3	Q4	Q1	Q2
Equities						
Net issuance	-0.7	2.6	1.0	2.0	0.6	1.5
Gross issuance	0.8	2.7	1.0	2.0	0.8	1.8
Repayments	1.5	0.0	0.0	0.0	0.2	0.3
Corporate bonds[(b)]						
Net issuance	1.1	1.5	0.9	1.6	0.5	-1.2
Gross issuance	2.6	4.3	2.8	3.5	2.4	1.3
Repayments	1.5	2.8	1.9	2.0	2.0	2.6
Commercial paper						
Net issuance	0.0	-0.6	-0.8	-0.4	0.5	0.1
Gross issuance	4.4	3.3	2.1	1.1	3.0	2.0
Repayments	4.4	3.9	2.8	1.5	2.6	1.8

(a) Averages of monthly flows of sterling and foreign currency funds. Due to rounding, net issuance may not equal gross issuance minus repayments. Data are non seasonally adjusted.
(b) Includes stand alone and programme bonds.

Source: Bank of England August 2010 Inflation Report