

NEW MODES OF MONETARY POLICY: QUALITATIVE EASING BY THE FED

Philipp Bagus and Markus H. Schiml

Recent developments in monetary policy demand new analytical tools, in particular an analysis of central banks' balance sheets. During the sub-prime crisis the balance sheet of the Federal Reserve System deteriorated substantially. In this article we analyse the process of this deterioration in detail.

Keywords: Central banks' balance sheets, quality of money, balance sheet analysis, sub-prime crisis.

During the course of the sub-prime crisis the Federal Reserve System has engaged in policies that call for new analytical tools. Much attention has been paid to the fact that the Fed has lowered its target interest rate nearly to zero. Hence, it lost much of its stimulating power by further reducing interest rates. However, the Fed is far from 'running out of ammunition'. In fact, long before the Fed reached the zero bound it had started to pursue policies that were intended to stabilise the financial system in other, non-conventional, ways. These policies can be analysed by looking at the evolution of its balance sheet.

Even though there have been analyses of central bank balance sheets *en passant* such as an early one conducted by Hayek (1925), in general the analysis of central bank balance sheets has been neglected and has never stood in the centre of the analysis of monetary policies. Especially in light of recent developments, the analysis of central bank balance sheets should become a new field of the analysis of monetary policy.¹

The analysis of the Fed's balance sheet during the sub-prime crisis is particularly revealing. It demonstrates the Fed's efforts to bail out an insolvent and illiquid banking system. Moreover, the Fed's balance sheet gives insights on the condition and quality of the dollar.² Since the crisis broke out, the Fed has continually deteriorated the quality of the dollar by deteriorating the quality of assets on its balance sheet. We might call this policy of deteriorating the average quality of assets held as 'qualitative easing'. The Fed's assets back the liability side of the balance sheet, which

mainly represents the monetary base of the dollar. The assets of the Fed, thereby, hold up the value of the dollar. The Fed can use those assets to defend the dollar's value externally and internally by selling those assets for dollars.

In the first stage of the crisis that lasted until September 2008 the Federal Reserve did not lengthen its balance sheet, i.e. the Fed did not increase the total of its balance sheet (see Figure 1). Instead of lengthening its balance sheet, the Fed changed its balance sheet structure. It deteriorated its composition in favour of banking system assets. In fact, the Federal Reserve sold good assets (mainly the highly liquid government bonds in the position 'securities held outright') in order to acquire lower quality assets (loans given to troubled banks backed by problematic and illiquid assets). As can be seen in the chart, starting from August 2007 the assets of lower quality increased. They grew especially in the form of repurchase agreements and later in the form of new types of credits such as term auction credits which started in December 2007. However, the Federal Reserve did not want to lengthen its balance sheet and increase bank reserves. Therefore, it sterilised the increased amount of bad assets, by selling good assets to the banking system. This had the effect of transferring good assets to the troubled banking system. Swapping good assets for bad assets can, in fact, be considered as a bailout of the banking system. Moreover, the Federal Reserve started lending securities (good assets) to banks in the so-called term securities lending facility (TSLF). This

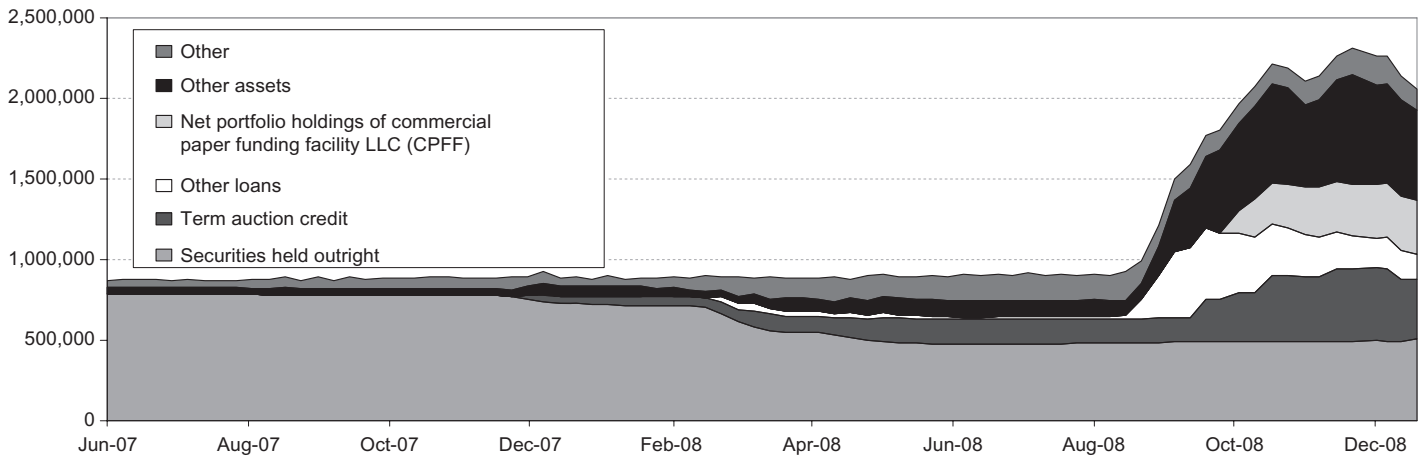


Figure 1: Fed balance sheet assets (28 June 2007 to 15 January 2009, in million US dollars)
Source: FED (2009).

measure provided the banks with high quality assets they could pledge as collateral for loans. As a consequence the amount of securities held effectively by the Fed decreased by selling and lending, as can be seen in Figure 2.

Thus, the average quality of the Federal Reserve balance sheet deteriorated in the first stage of the crisis and continues to do so, as is portrayed in the compositional graph depicted in Figure 3.

In the second stage of the crisis, which started with the bankruptcy of Lehman Brothers, it became clear that the policy of changing the composition of the balance sheet without lengthening it was coming to an end – the Fed was running out of Treasury bonds. Moreover, this policy did not allow for the strong liquidity boosts that the Fed deemed appropriate in this situation. Hence, in response, the Fed started to lengthen its balance sheet. In other words, it no longer sterilised the additional credits it granted by selling

good assets in exchange. In fact, even if it wanted to use them, it would not have had enough good assets available for sale to offset the new purchases. As a consequence, the sum of the balance sheet has nearly tripled since June 2007.

In addition, in the process the Federal Reserve has been quite innovative in the ways it has helped the troubled banking system. With these innovations the Fed deteriorated the quality of the dollar. Thus, the Fed has introduced new credit programmes with a tendency of longer terms as the aforementioned term auction facility. It has granted special loans to AIG and bought the assets of Bear Stearns that JPMorgan did not want. It has allowed primary dealers to borrow directly from the Federal Reserve in the primary dealer credit facility (PDCF). In addition, the asset-backed commercial paper money market mutual fund liquidity facility (AMLF) was installed. This facility allows depository institutions to borrow from the Fed with collateral of

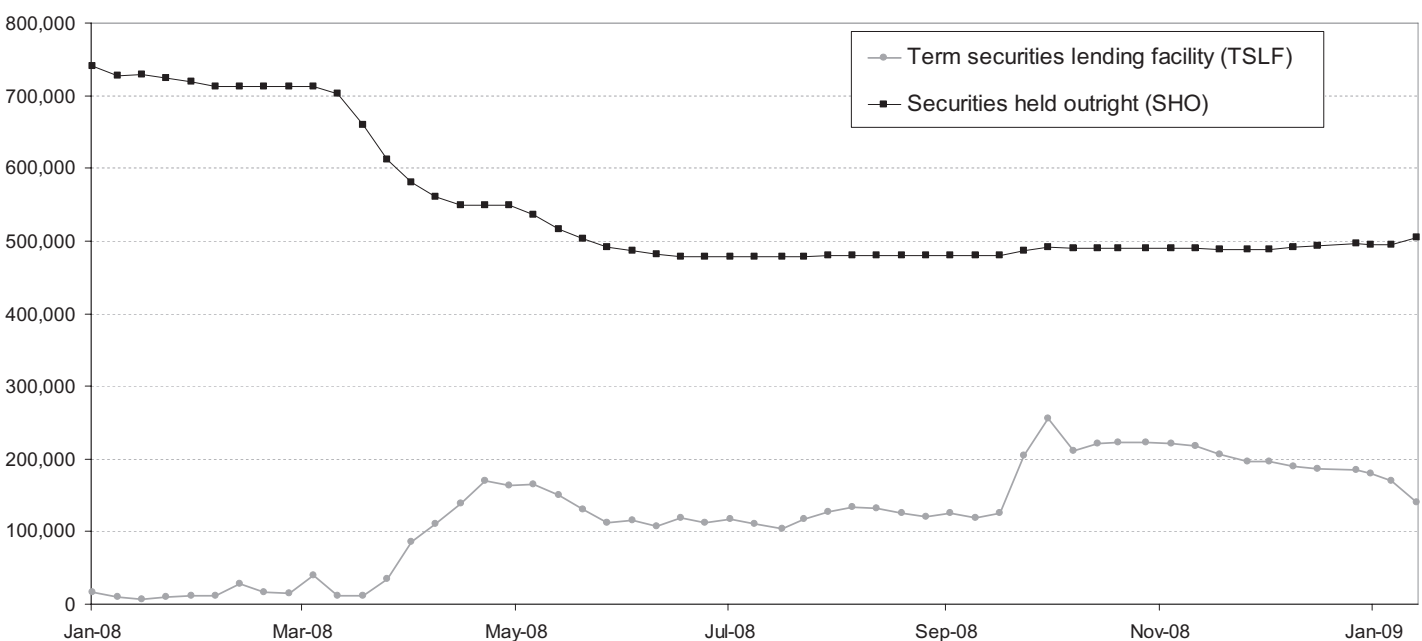


Figure 2: TSLF and SHO (3 January 2008 to 15 January 2009, million US dollars)
Source: FED (2009).

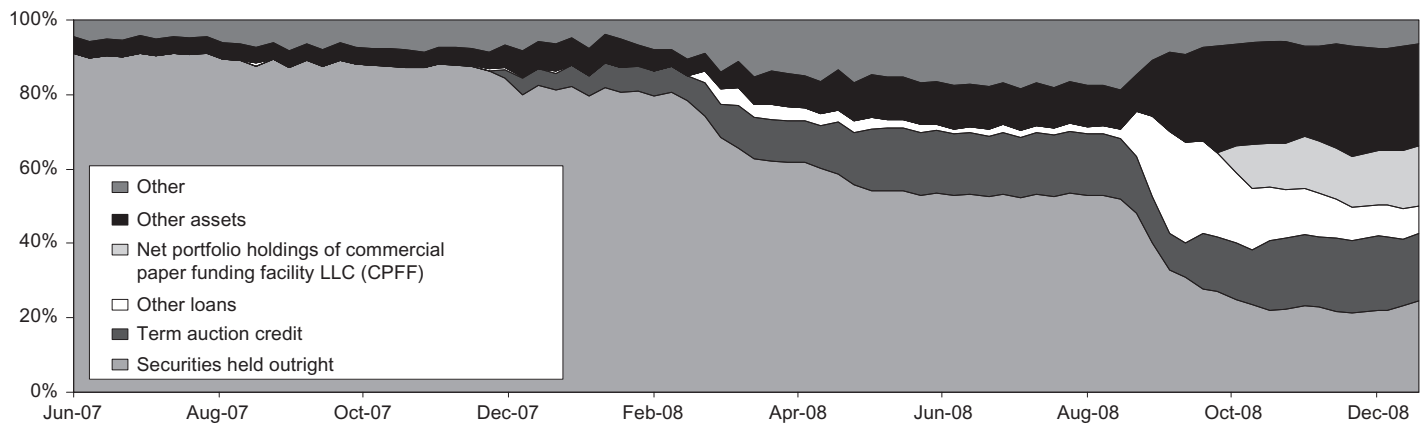


Figure 3: Fed balance sheet assets (28 June 2007 to 15 January 2009, in per cent)
Source: FED (2009).

asset-backed commercial paper. Later the Fed decided to supplement the AMLF with the commercial paper funding facility (CPFF). Now unsecured commercial paper is also eligible as collateral for loans from the Fed. Furthermore, the Fed has set up the money market investor funding facility (MMIFF) which allows money market mutual funds to borrow via structured investment vehicles directly from the Fed. Three characteristics of these policies can be found: they contain credits of longer maturities, granted to a broader range of eligible institutions backed by a broader range of assets than was the case before. They thereby reduce the average quality of the Fed assets (qualitative easing) and consequently the quality of the dollar.

In the analysis of the Fed's balance sheet and the condition of the dollar another detail is important. The equity ratio in the FED balance has lowered from about 4.5 to around 2.0% (see Figure 4).

Figure 4 implies a rise of leverage from 22 to 50. As we have seen, there are large new positions of lower quality on the Federal Reserve balance sheet. When only a small position fails and leads to losses, the equity will become negative. More specifically, when 2% of the Fed's assets go into default or if there is a loss in value of 2%, the Fed is insolvent. There are two ways that the Fed can regain solvency at that point. One is a bailout by the Federal government. This recapitalisation could be financed by taxes or monetising government debt which is inflationary. The other possibility is concealed in the hidden reserves of the Fed's gold position which is valued at only \$42.44 per troy ounce in the balance sheet. A revaluation of the gold reserves would boost the equity ratio of the Fed to 12.35% at a market value of \$810/oz (15 January 2009) (see Figure 5).

Despite all of the new innovative efforts of the Fed, credit markets still have not come back to normality. Interest rates

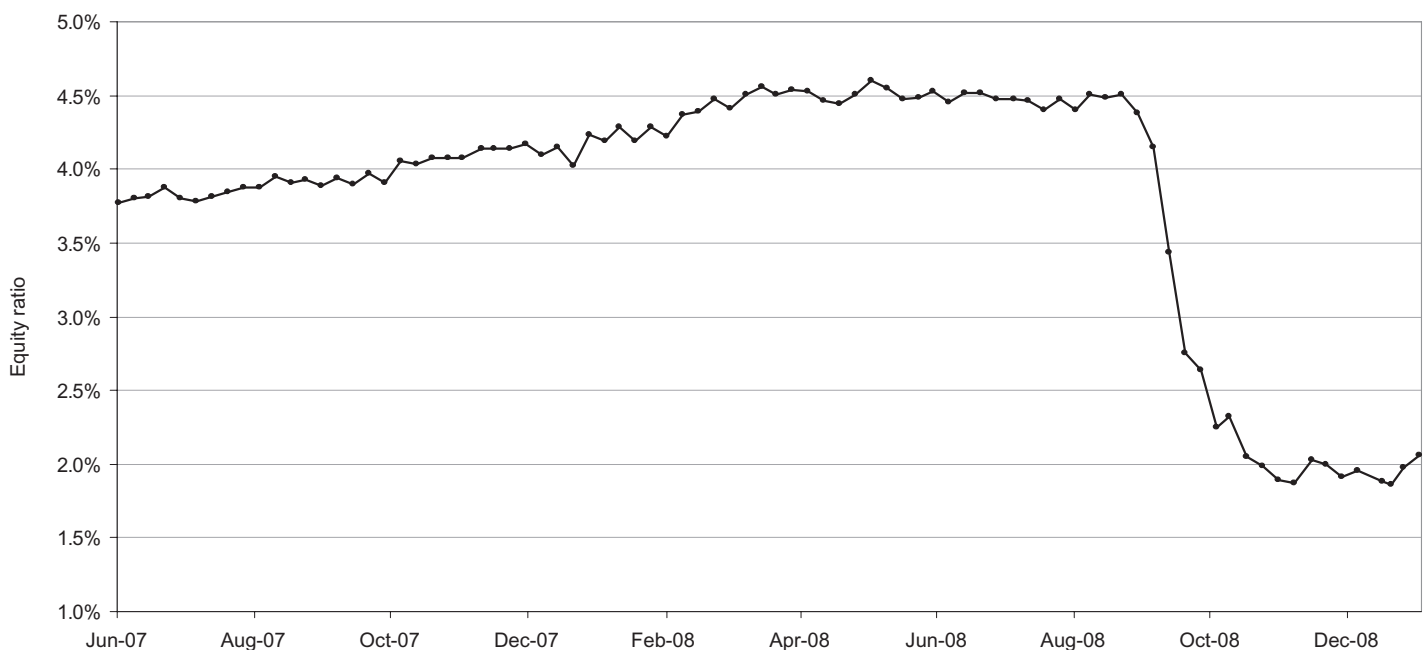


Figure 4: Fed balance sheet equity ratio (28 June 2007 to 15 January 2009, in per cent)
Source: FED (2009).

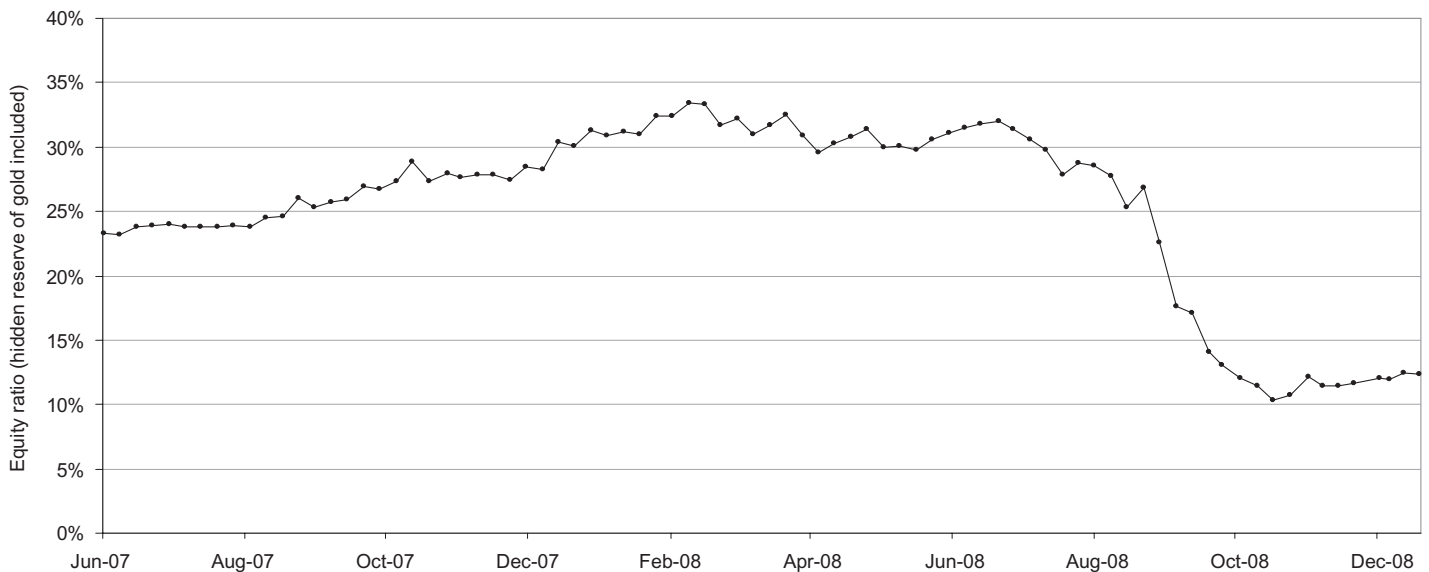


Figure 5: Fed balance sheet equity ratio (28 June 2007 to 15 January 2009, in per cent, hidden reserve included)
Source: FED (2009).

are already practically at zero. Ben Bernanke's new tool is the so-called 'quantitative easing' approach. Quantitative easing is when a central bank with interest rates already near zero continues to buy assets further injecting reserves into the banking system. Quantitative easing can be considered as a special case of qualitative easing if the assets bought reduce the average quality of assets. The Fed has already started buying mortgage-backed securities issued by Fannie Mae, Ginnie Mae and Freddie Mac. Bernanke has also considered the acquisition of long-term government debt.

As has been shown in this summary of the Fed's policies, innovative instruments of monetary policy have been recently introduced that cannot be fully grasped or appreciated by just looking at monetary aggregates or target interest rates. In order to fully understand the Fed's policies a more qualitative approach to balance sheet analysis is in order. Our analysis has shown that the Fed started to deteriorate its balance sheet at the beginning of the sub-prime crises. Later on, the Fed stopped sterilising its new credits and lengthened its balance sheet. In the future, the theory and practice of analysing central banks' balance sheets should be deepened in order to understand changes in monetary policy and possibly also in exchange rates.

Acknowledgement

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1. See Bagus and Schiml (2008) for a detailed instruction of conducting an analysis of central bank balance sheets.
2. For authors emphasising the quality of a currency, see, for instance, Bagus (2008), Cunningham (1992), Hazlitt (1978) and Mariana (1609).

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Philipp Bagus is an associate professor at Universidad Rey Juan Carlos, Madrid (philipp.bagus@urjc.es).

Markus H. Schiml is lecturer at the Institute of Educational Economics campus (info@campus-quadrat.de).