

Business Cycle Basics, Part 7 Two Brands of QE

A Comparison of Fed & BOE QE with BOJ and ECB QE

John Greenwood

International Monetary Monitor

First published Sept 2017, revised July 2026

“Monetary policy is not about interest rates. It is about the rate of growth of the quantity of money.” Milton Friedman, interviewed on NBC’s Meet the Press, October 24, 1976.

After the global financial crisis of 2008-09, commercial banks were risk averse and reluctant to lend, while households and financial companies were reluctant to borrow, being anxious to de-leverage by repaying loans. There was consequently a risk of the broad money and credit aggregates shrinking and causing deflation. In response central banks stepped in with asset purchases or other credit facilities to create new money. After several iterations of quantitative easing (QE) in the US, UK, Japan, and the Eurozone, it was clear that the policy had been much more successful in the US and the UK than in Japan or the eurozone (where growth was weak, there was a continuing risk of deflation, and where negative interest rates prevailed).

This article explains why QE appears to have been relatively successful in the US and the UK but appears to have failed to gain traction in Japan and the euro-area. After a review of the standard, orthodox view of what QE was intended to achieve and how (pp. 2-3), I summarize the experience of the United States in 1929-33 and show how the 2008-2011 experience threatened to be very similar – until QE was implemented in the US -- and the UK (pp. 4-6). Next, I contrast the balance sheet impact of a well-designed QE plan with a poorly designed QE plan and the analysis is applied to the balance sheet data of the BOJ and the ECB (pp.7-10). The effects on interest rates in Japan and the eurozone are examined (pp.11-12) before concluding (p. 13-15).

Some Key Propositions

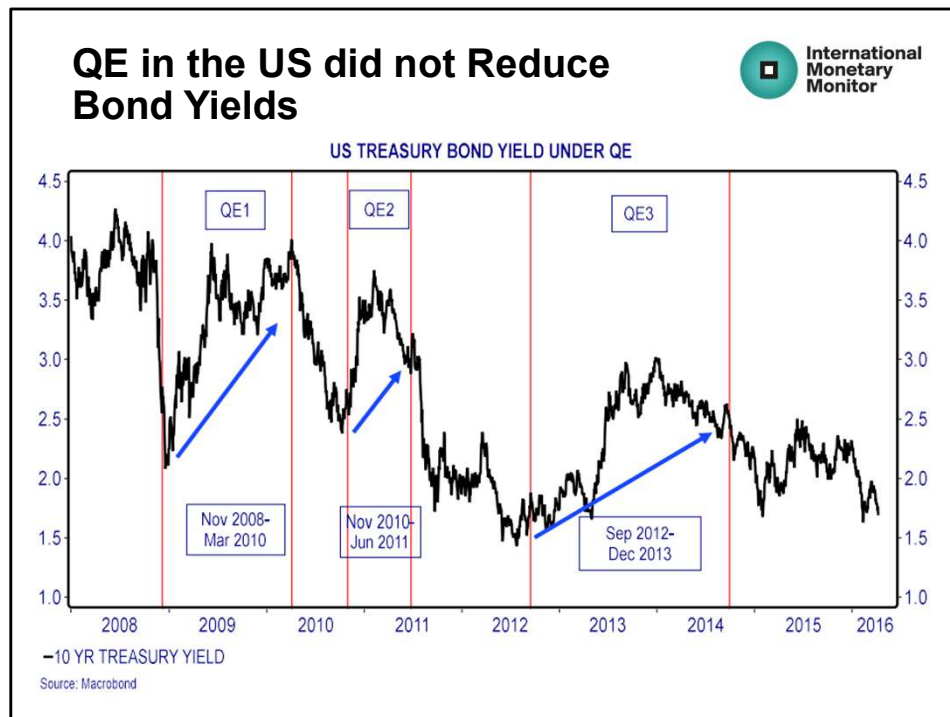


1. A key problem following the Minsky moment in 2008 was that deleveraging by the private sector effectively blocked credit and money growth, slowing nominal and real GDP growth.
2. QE was able to solve both problems by creating new money independently of the banking system.
3. Cutting interest rates alone was not enough to create new money growth. With their balance sheets impaired, banks were unwilling to lend, and/or households and firms were unwilling to borrow.
4. Deleveraging was not helped by new bank lending. But QE, *done properly*, was able to create new money (deposits) without the normal counterpart, increased bank loans. QE could, therefore, assist in promoting private sector de-leveraging.

2

A major problem in the debate about QE is the way that monetary policy is measured and assessed. In this article I take the position that interest rates are not a good measure of the stance of monetary policy. In general, it is always better to assess monetary policy based on the rate of growth of a broad measure of money such as M2 or M3. By contrast, assessing monetary policy on the basis of the level of nominal interest rates is highly problematic – as pointed out a century ago by Irving Fisher. For example, high nominal rates can be either the consequence of a prolonged period of rapid money growth and hence the result of high inflation, or they could indicate the start of a period of monetary tightening. Conversely, low nominal interest rates can be the result of a prolonged period of slow money growth and hence low inflation or even deflation (as in Japan over the past three decades), or they can indicate the start of a period of rapid money growth.

Despite these drawbacks, central banks and economists have mainly discussed and assessed QE in terms of its interest rate effects. The QE strategy was presented by most central bankers and economists as a policy of monetary easing intended to lower long-term interest rates. However, the QE asset purchases did not always produce faster growth of the quantity of money. Low inflation or deflation persisted, leading in turn to the apparent need to move to even lower or negative interest rates.

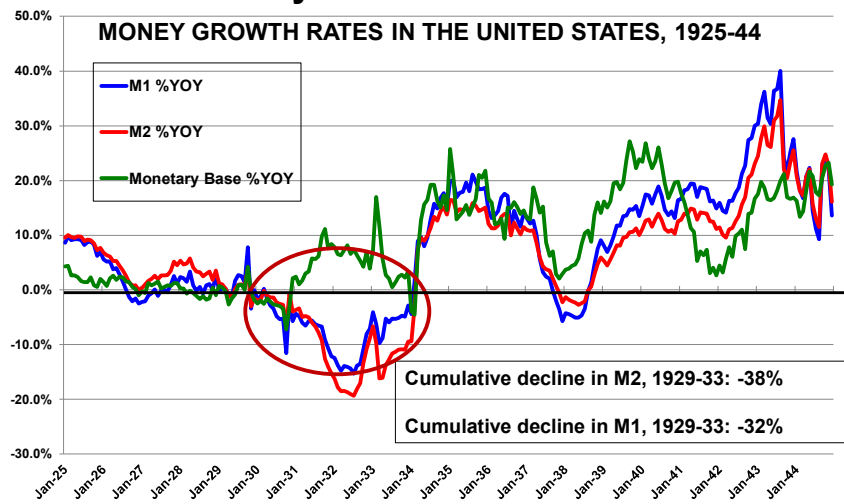


Most of the academic and central bank literature on QE focuses on the interest rate effects of the policy. However, as the chart above shows, although there was an announcement effect around the start of each of the Federal Reserve’s three QE programmes (labelled QE1, QE2, and QE3 in the chart – see Appendix), prompting brief *declines* in bond yields, once QE was implemented US Treasury bond yields *increased* on each occasion by 100-150 bps.

Given the depth of the 2008-09 recession, the conventional view was that cuts in short-term rates were probably insufficient to ensure recoveries, so QE was designed to lower longer-term rates such as mortgage rates. By lowering rates all along the yield curve, new borrowing would – it was claimed – be encouraged, and later, economic recovery. The policy was accompanied by “forward guidance” (effectively promises not to raise rates any time soon).

By contrast with the consensus, I shall argue that it is the quantitative effects of QE that matter most, not the effect on bond yields or the yield curve. Moreover, if the QE programme is effective (i.e. it generates faster money growth and economic recovery), then it is likely that bond yields will rise, not fall. In this sense, rising yields are a sign of success, not failure.

What Happens when Banks don't Create Money? The US Monetary Problem in 1929-33



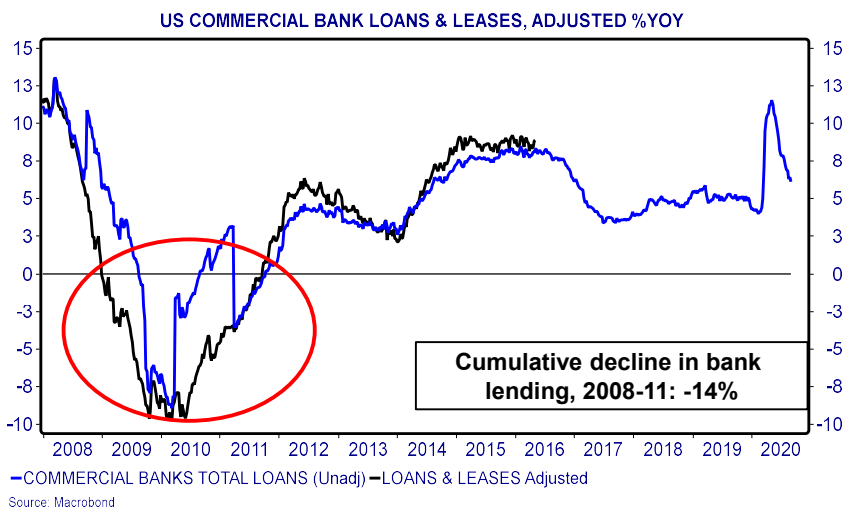
4 Data source: Friedman & Schwartz, A Monetary History of the United States, 1963.

To establish the importance of the quantitative aspects of monetary policy, consider the United States in 1929-33.

As shown in the chart above the rates of monetary growth (M1 and M2) slowed in 1929 and moved into negative territory on an annual basis between November 1929 and January/February 1934. Cumulatively the declines in the money stock amounted to 38% in the case of M2 and 32% in the case of M1. The “Great Contraction” in money was accompanied by runs on banks, concerns about their solvency and a sharp weakening of their loan portfolios. Bank runs across the country led to large-scale conversions of deposits into currency, as reflected in the 10% annual increases in cash currency held by the public and reserves held by the banks. Together cash currency and bank reserves comprise the monetary base (shown in green in the chart above) which increased rapidly in 1931-32. Note that this increase was due to actions by the banks and the public together – not due to the actions of the Federal Reserve.

For better or worse the Federal Reserve did not counteract the downturn in money growth in 1931-33 with security purchases or money creation, exacerbating both the recession and the deflation. The key difference in 2008-09 was that both the Federal Reserve and the Bank of England did take countervailing action, and the result was that a monetary contraction was avoided.

In 2008-11, US Bank Lending Fell by 14%. In 2012-14 it was Growing at only 4-5% yoy.



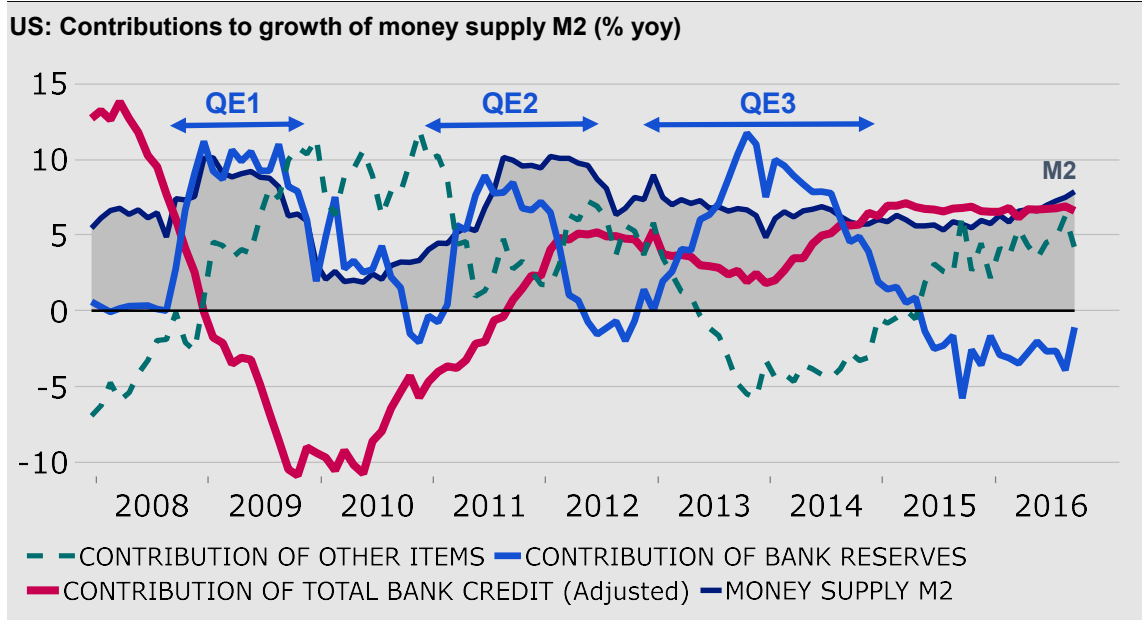
In the years immediately after the GFC, between November 2008 and the final quarter of 2011, there was essentially no appetite to lend or to borrow even at very low interest rates. This was despite central bank rates being lowered to 0-0.25% in the US and 0.5% in the UK. This is clear from the collapse in US commercial banks' loans shown in the chart above. Without offsetting action there would have been a parallel collapse in the broad money stock.

In effect, the fundamental problem faced by policy makers in 2008-09 was how to avoid repeating the 1931-33 experience in the United States.

As the chart above shows the decline in bank lending extended from 2008 to 2011, a cumulative decline of 14% in outstanding loans. Even after 2011, bank credit continued to grow very slowly until the start of 2014. If the authorities had done nothing, deposits or money supply would have also declined by roughly the same amount. The unwinding of leverage, loan repayments, and balance sheet repair by households and non-bank financial institutions would have deepened the recession, raised unemployment and created a severe deflation. Instead, M2 growth averaged 6.8% p.a. between January 2009 and October 2013.

In short, the role of QE was to create new bank deposits to take the place of those that would have been lost through loan repayments and deleveraging. Its role was not – or should not have been -- to lower interest rates along the yield curve.

The Role of QE1-QE3 in the US was to Ensure that Broad Money did not Contract in Line with Bank Credit

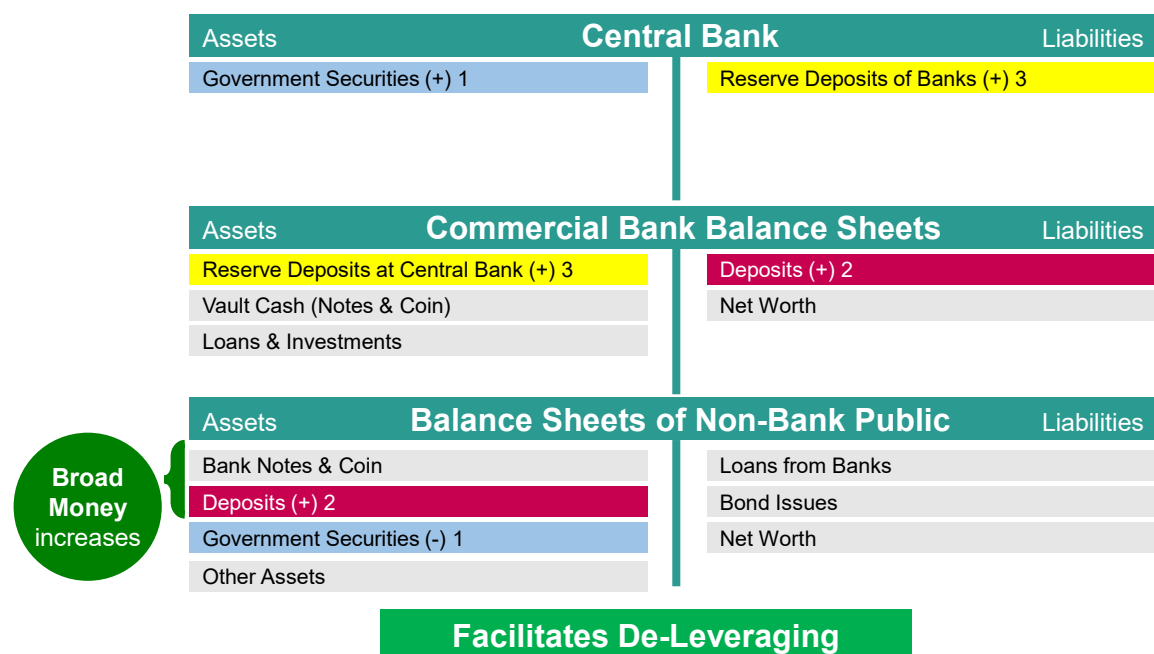


9

The role of QE1-QE3 in the US was therefore to ensure that the money supply did not contract in line with bank credit – as it had done in 1929-33. In this respect, the policy was eventually successful.

As shown in the chart above, the annual percentage changes in M2 can be accounted for by the contributions of three credit counterparts: bank credit, bank reserves and all other items (net). When QE1 and QE2 were implemented, US bank credit (the sum of loans and holdings of securities, shown in red) was declining. However, Fed purchases of securities had the effect of injecting new deposits (credited to the sellers of securities to the Fed) to replace those deposits that would otherwise have been lost through loan repayments and de-leveraging. The counterpart asset was an increase in banks' reserves (in blue). The chart shows clearly how declines in bank credit in 2009-10 and weak bank credit growth in 2011-12 were offset by surges of bank reserves associated with the QE1 and QE2 asset purchases. Again, with the weakening of bank credit growth in 2012-14, QE3 purchases acted as a counterbalance, supporting sustained bank deposit growth and preventing a slowdown in deposit (or money) growth. In short, after three rounds of QE, the Fed was successfully able to hand over the money creation "baton" over to the banks.

A well-designed asset purchase plan (QE) – Liquidity-enhancing



Source: John Greenwood - for illustrative purposes only. This must not be seen as investment advice

However, there are two distinct brands of QE. To see the difference between the Fed/Bank of England operations and the BOJ/ECB operations, we review the impact of their transactions on the balance sheets of the banks and the non-bank public. The numbers below relate to the paired transactions set out in the T-form balance sheets above. First, the Fed/BOE transactions:

1. The central bank purchases government securities from **non-bank** entities (e.g. insurance companies, pension funds, individuals, or foreigners) which sell government securities to the central bank.
2. The sellers receive new deposits from the central bank in settlement of their sale, which expands the **money supply**.
3. The banks deposit the payment drafts they receive from the sellers of government securities at the central bank. Banks' holdings of deposits at the central bank are increased by an amount which exactly matches the central bank's initial purchase. Note that after these transactions both sides of the central and commercial banks' balance sheets have expanded, with increases in assets matched by increases in liabilities. However, at this stage, the balance sheet of the non-bank public has not increased -- it has simply become more liquid, as government securities are replaced with new deposits. The key point about this series of transactions is that the money (M2 or M4) in the hands of the non-bank public has now increased, and, given that interest rates are at the zero bound, the holders will almost certainly wish to spend the proceeds either on new investments, kick-starting the **portfolio re-balancing effect**, or on consumption.

An asset swap operation – Not liquidity-enhancing

Central Bank	
Assets	Liabilities
Government Securities (+) 1	Reserve Deposits of Banks (+) 2
Loans to Banks	
Foreign Assets	

Commercial Bank Balance Sheets	
Assets	Liabilities
Reserve Deposits at Central Bank (+) 2	Customer Deposits
Vault Cash (Notes & Coin)	Net Worth
Government Securities (-) 1	
Loans & Investments	

Balance Sheets of Non-Bank Public	
Assets	Liabilities
Bank Notes & Coin	Loans from Banks
Deposits	Bonds Issued
Government Securities	Net Worth
Equities Owned	
Bonds Owned	
Other Assets Owned	

Doesn't Help Deleveraging

No
change in
**Broad
Money**

Source: John Greenwood, for illustrative purposes only. This must not be seen as investment advice

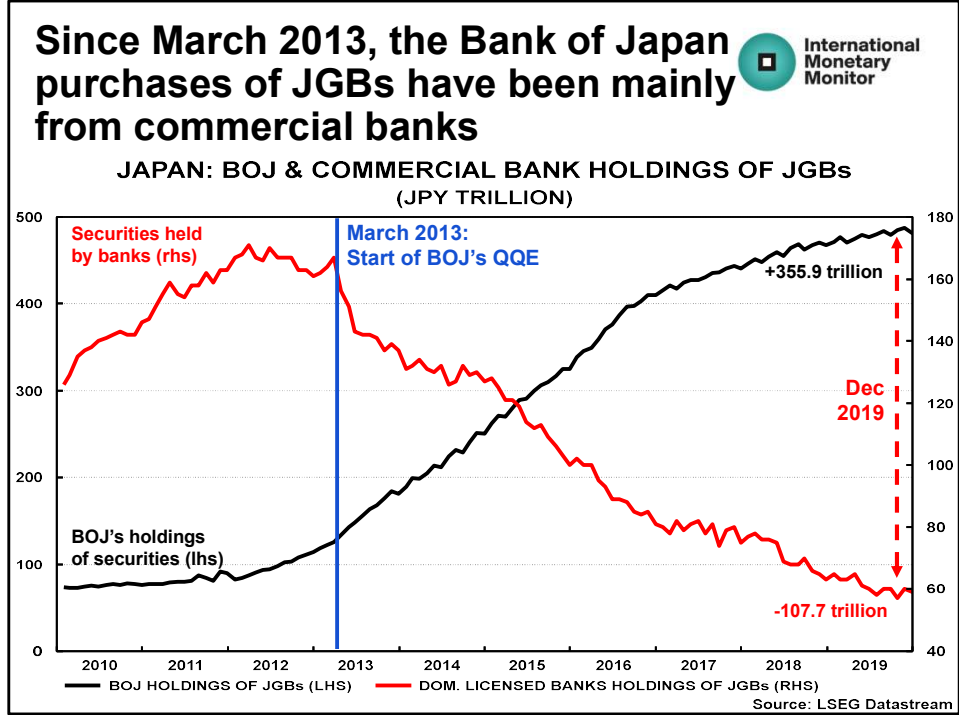
8

Next, consider the effects of the second type of central bank transaction such as those conducted by the BOJ or ECB, either via QE or under the ECB's LTRO programmes. Once again, the numbers below relate to the paired transactions set out in the T-form balance sheets above.

1. The central bank buys government securities from the commercial banks. Commercial bank holdings of securities decline; central bank holdings increase.
2. Commercial banks receive a credit from the BOJ or ECB for their sale of securities; reserve deposits of banks at the central bank increase.

Note that after these transactions the central bank's balance sheet has expanded, with increases in assets matched by increases in liabilities. But commercial banks have merely undertaken an asset swap; they now hold less government securities, but more deposits at the central bank. On this occasion, the balance sheets of the non-banks are unaffected. The key point is that the money holdings (M2 or M3) in the hands of the non-bank public have **not** increased.

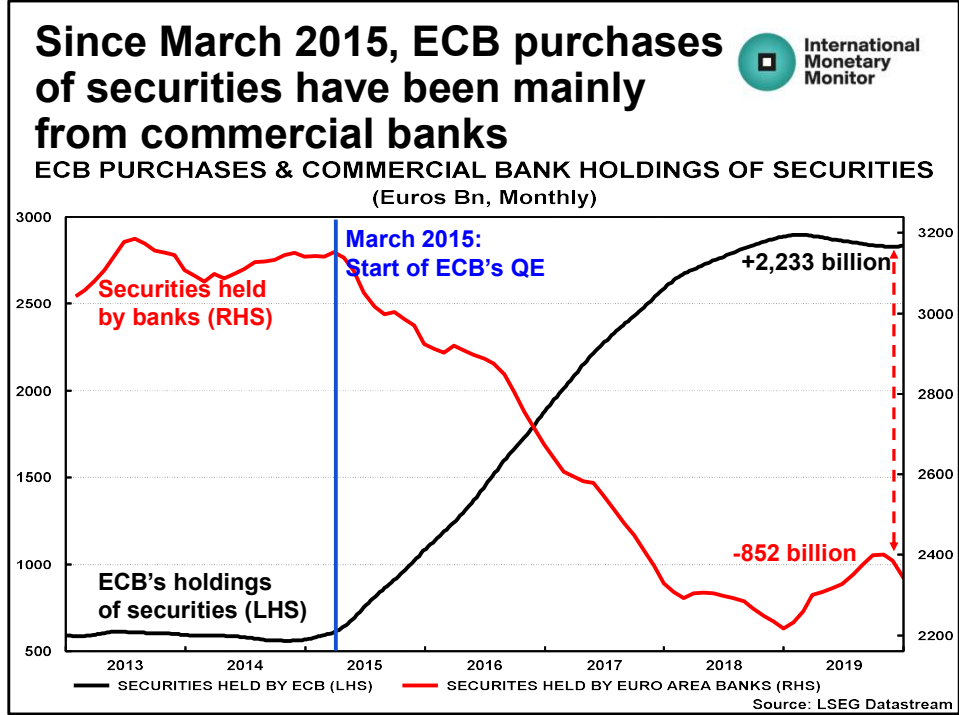
Moreover, given the starting point of risk aversion by the banks, there can be no assurance that the banks will expand their lending, or the deposits that result from new lending. Equally, new investment or consumption spending is unlikely to follow. Even if banks were to expand their lending, this would be accompanied by a parallel **increase in leverage** by firms or households – the opposite of the balance sheet repair process that policy-makers should be seeking to achieve.



In short, only purchases of securities from non-banks are consistent with balance sheet repair and enhanced liquidity (money) in the hands of firms and households.

To demonstrate that the Bank of Japan did indeed purchase most of its securities from banks rather than non-banks it is only necessary to review the balance sheet data of the BOJ and the Japanese commercial banks. As shown in the chart above, from the start of QE under Governor Kuroda in April 2013, Bank of Japan holdings of Japanese Government Bonds (JGBs) and short term financing bills issued by the government increased from JPY 125.4 trillion in March 2013 to JPY 481.3 trillion in December 2019, an increase of JPY 355.9 trillion. Meanwhile, commercial bank holdings of JGBs declined over the same period from JPY 166.6 trillion in March 2013 to JPY 58.9 trillion in December 2019, a decrease of JPY 107.7 trillion.

Note that these data were derived from balance sheet figures and do not include flow data between balance sheet dates. Typically, Japanese banks would participate in the regular JGB auctions and then sell some of their recent purchases to the Bank of Japan. Such intra-month sales would not be recorded on month-end balance sheets, and therefore the figures quoted here for Japanese commercial bank sales of JGBs understate by some margin their actual sales to the Bank of Japan.

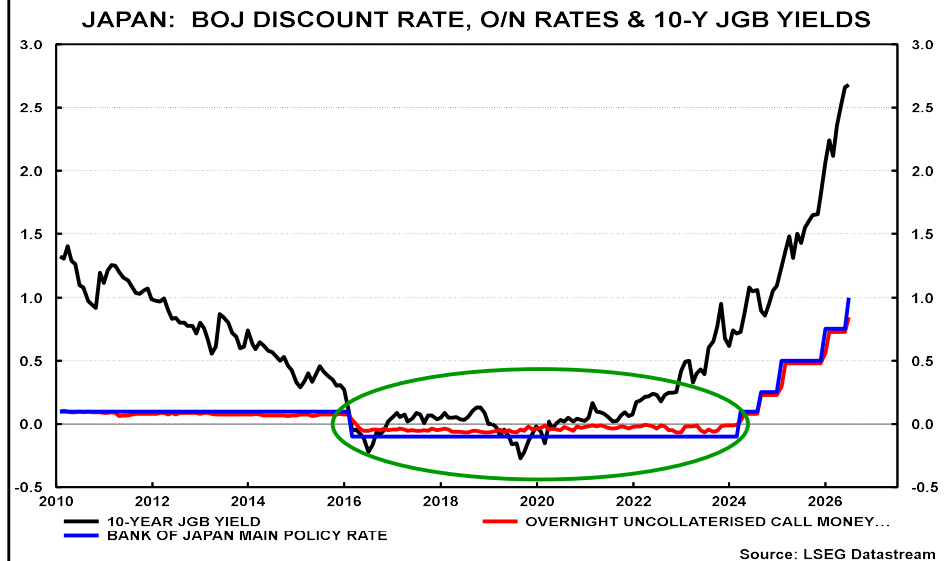


Conducting a similar analysis of the ECB and euro area commercial bank holdings of government securities, we obtain a similar result. Between March 2015 and December 2019, under its asset purchase programme (APP) the ECB purchased euro area sovereign securities amounting to 2,233 bn euros, while euro area commercial banks' holdings of securities declined by 852 bn euros over the same period.

As with the Japanese banks, the decline in securities holdings of euro area banks significantly understates how much they may have sold to the ECB because the month-end balance sheet data used here only show the change in the balance sheet totals at the end of each month. They do not include the full flow data. Within any one month the banks may have bought securities at JGB auctions or in the secondary market, and then sold them to the central bank before month-end.

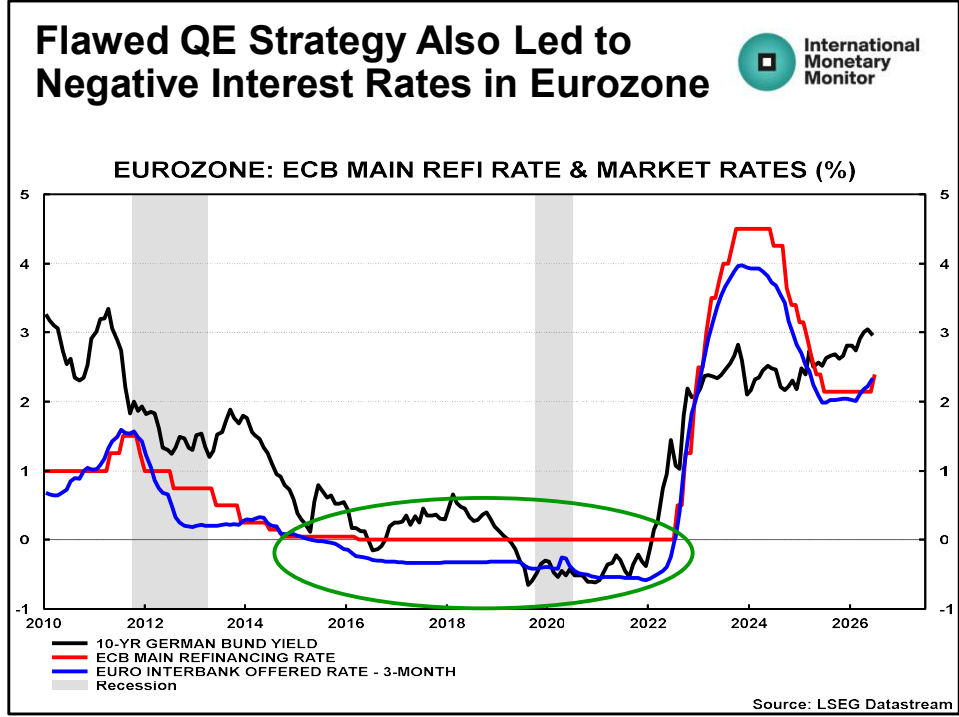
As a measure of the relative ineffectiveness of the ECB's QE or asset purchases (due to the banks being the primary counterparty) together with its LTRO schemes, consider this: there were periods when the increase in the size of the ECB's balance sheet, or high-powered money, exceeded the increase in the euro area's broad measure of money, M3.

Flawed QE Strategy Led to Negative Interest Rates in Japan



To restore economic growth and raise inflation in both Japan and the eurozone, the economies first needed to be re-liquefied, or provided with additional purchasing power, but without adding to leverage. The best way to have done that would have been to increase the growth of broad money. Second, the central banks in Japan and the euro area needed to encourage and ensure the repair of private sector balance sheets since spending would not resume at normal or potential growth rates unless balance sheets were repaired (i.e. unless excess leverage was reduced). Again, the best way to have done that would have been with new money created by the central bank.

Instead, the Bank of Japan and the ECB both adopted flawed QE strategies, purchasing securities from banks instead of non-banks. Since these policies did not work well to revive economic activity or inflation, both the BOJ and the ECB kept on lowering interest rates. Surely, they thought, if only we can lower rates far enough, eventually somebody will be induced to borrow. But the reluctance to borrow even at negative rates did not enable firms and households to repair their balance sheets quickly. As the chart above shows, Japanese rates moved into negative territory in early 2016 and remained there until February 2024.



Similarly in the Eurozone, as the chart above shows, negative rates persisted from mid-2015 until July 2022. Negative rates were also prevalent in Denmark, Sweden and Switzerland, all countries which pegged their currencies to a greater or lesser degree to the euro, and therefore were compelled to follow Eurozone monetary policies.

By contrast, the US and the UK (along with other economies which adopted QE strategies of purchasing securities from non-banks) did not experience negative rates. By directly increasing the quantity of money these economies enabled gradual recoveries to occur, and later, modest rates of inflation, avoiding the need to push interest rates into negative territory.

In my view, it is no coincidence that the two main areas which experienced sub-par growth, near-deflation and negative interest rates – i.e. Japan and the Eurozone (plus the three euro-linked economies of Denmark, Sweden, and Switzerland) – were also the economies where the major central banks implemented flawed versions of QE – relying mainly on the interest rate effects of their policies, not the quantitative effects.

Two Types of QE Implemented Effects depend on the counterparty



Two Types of QE Operation

Central Bank	Targeted Securities	Counterparties
Federal Reserve	<ol style="list-style-type: none"> 1. Mainly long-dated USTs; some T-Bills 2. MBS 	Non-Banks
Bank of England	<ol style="list-style-type: none"> 1. Long-dated gilts 2. Commercial paper 	Non-Banks
Bank of Japan	1. JGBs, Finance Bills	Banks
	2. ETFs, J-REITs	Non-Banks
ECB & Euro-area National Central Banks	1. Sovereign Debt	Banks
	2. Corporate Bonds	Non-Banks

13

To sum up the argument, among the major developed economies -- such as the US and UK on the one hand, and the Eurozone and Japan on the other -- two different brands of QE have been conducted in recent years.

The QE operations conducted by the Fed and the BoE have largely been successful (1) because they were targeted at the purchase of securities from non-banks, and (2) they therefore increased the stock of money or purchasing power held by firms and households directly. Moreover, (3) this brand of QE was consistent with a reduction in private sector leverage because it increased money held by non-banks while not increasing private sector borrowing from banks.

By contrast, the QE operations conducted by the BOJ and the ECB in the aftermath of the GFC had much less success (1) because they were targeted largely at the purchase of securities held by banks, and as a result, (2) they did not increase the stock of money or purchasing power held by firms and households. In addition (3), they were not consistent with any reduction in private sector leverage.

In effect, the BOJ and the ECB wasted their (QE) ammunition by purchasing securities from banks because these operations did not create additional money supply.

Summary & Conclusion



- **Central bank purchases of assets or securities from commercial banks far less effective than purchases from non-banks.**
- **Purchases from non-banks directly expand the volume of deposits and money supply, without adding to leverage.**
- **Both the BOJ and the ECB mistakenly focused their purchases on banks rather than non-banks.**
- **This undermined the effectiveness of QE in expanding money.**
- **Negative rates, which resulted from the failure of this brand of QE, were a fundamentally mis-directed strategy.**
- **Reducing rates to negative territory did not necessarily expand money and probably led to even lower rates by putting pressure on banks (through reduced NIMs) to contract their balance sheets still further.**

14

Conclusion

- This article has argued that despite loose talk in the financial markets about “central banks doing QE”, there have in fact been two very different brands of QE in operation around the world: security purchases from non-banks and security purchases from banks.
- Purchases by central banks from non-banks directly expand the volume of deposits and money supply, without adding to leverage.
- Central bank purchases of assets or securities from commercial banks are far less effective because they do not “create money”.
- Unfortunately, both the BOJ and the ECB continued to focus their purchases primarily on banks as counterparties rather than non-banks.
- This undermined the effectiveness of their QE or QQE policies because it meant that the money supply did not increase much, if at all, under such a strategy.
- In part due to the failure of this flawed version of QE, the BOJ and the ECB embarked on negative interest rate schemes. This could have been avoided by re-designing their brands of QE instead of persisting with negative rates.
- Reducing rates to negative territory did not succeed in expanding money and simply put pressure on banks (through reduced net interest margins), forcing some to contract their balance sheets still further, resulting in even slower monetary growth.

Appendix Material



- ***QE Programs in the United States:***
- ***QE1:*** November 25, 2008 (launched December 16) to March 2010 (\$600bn, MBS and agency debt); March 18 2009 additional \$750bn in MBS and agency debt and \$300bn in Treasuries.
- ***QE2:*** November 3 2010 – June 2011 (\$600bn Treasuries at \$75bn per month).
- ***Operation Twist*** September 2011 – December 2012 (\$400bn of shorter-term bills and bonds were sold and replaced with longer term Treasuries)
- ***QE3:*** September 13 2012 – October 2014 (purchases of \$40bn MBS plus \$45bn longer term Treasuries per month)
- ***Tapering:*** December 2013 – October 2014 (Purchases were reduced at successive FOMC meetings.)

15

It is true that the Federal Reserve under Ben Bernanke’s leadership placed major emphasis on the interest rate effects of its operations whereas the Bank of England under Mervyn King placed more emphasis on changes in the stock of money, but nonetheless the success of the Fed’s policy came mainly from avoiding a monetary downturn, not from lowering interest rates.

Many commentators including officials at the BOJ and the ECB mistakenly still believe that the primary purpose of QE is to lower long term rates (see *Comprehensive Assessment: Developments in Economic Activity and Prices as well as Policy Effects since the Introduction of Quantitative and Qualitative Monetary Easing (QQE)* (<https://www.boj.or.jp/en>) 2016, Chart 1, p.36).

As Mervyn King, former Governor of the Bank of England, said in his Public Lecture to the Institute of International Monetary Research on November 23, 2021, “Quantitative Easing is an expansion of the money supply, although most central banks are reluctant to describe it as such.”

<https://www.youtube.com/watch?v=jCrSMVdcccxs>