

Quantitative Easing and the Helicopter Drop

Macroeconomic Policy beyond the Zero Bound

ALOK SHEEL

Over the last few decades economists and policymakers came to regard macroeconomic policies as the holy grail that could smoothen business cycles. This confidence has been badly shaken in the aftermath of the global financial crisis. Aggressive and unconventional monetary policies have been unable to put Humpty Dumpty back on the wall again. This article examines the working and possible implications of quantitative easing and the helicopter drop, the two unconventional monetary policies beyond the prevailing zero bound policy rates in advanced economies.

Over the last few decades, a sense of complacency had set in amongst economists and policymakers as they came to consider macroeconomic policies — fiscal initially, but increasingly monetary — as the holy grail that could smoothen business cycles and sustain high growth. This confidence has been badly shaken in the aftermath of what is arguably the most devastating financial and economic crisis since the Great Depression of the 1930s.

Unconventional monetary policies, along with aggressive fiscal policies, in advanced countries have been unable to stem the rot and put Humpty Dumpty back on the wall again. One consequence of this is that Adair Turner, former Chairman of the United Kingdom's Financial Services Authority (which was dissolved in 2013), has advocated that central banks go from quantitative easing (QE) to using the “helicopter drop of money” (Turner 2013, 2014). Instead of funding deficits through bonds bought by the central bank (“deferred tax”), governments should consider funding them through outright money creation.

This extraordinary advocacy appears to rest on two pillars. First, excessive leverage lay at the roots of the global financial crisis. More debt can never be the solution to what was a problem of excessive debt in the first place. Government debt has not only countervailed the private deleveraging that has occurred since the crisis broke (Dobbs et al 2015), but is now at levels that make sovereign default in some form likely. Second, government could use the money so created for infrastructure investment, and debt waiver of indebted households,

who would then get the confidence to start spending again. This would presumably revive economic growth and provide the escape velocity from the liquidity trap.

Money, Macroeconomic Policies and Bretton Woods

What exactly does all this mean? Can value, and value addition — growth — be conjured from thin air by central bankers just by printing money? Are they the shamans of the macroeconomic universe?

To understand the dynamics of macroeconomic policies, we perhaps need to start at the very beginning, when money was a rare commodity, whether cowrie shells, or minted from copper, zinc, bronze, silver or gold. As barter gave way to money, the latter became the universal measure of value. It was now possible to conceive of financial savings. Financial intermediation involved aggregating money from savers and on lending this to investors and consumers. Borrowers were expected to service the debt from future income streams. Where the borrower was the government, it was expected to service it from future tax streams.

Monetary experiments that tried to debase the currency by increasing the face value of the currency relative to the intrinsic value of the underlying precious metal invariably led to monetary instability and collapse. Bad (debased) money drove out good (where the extrinsic and intrinsic values were the same) money from the market through what came to be known as “Gresham's Law.”

When paper currency was introduced it was originally backed with this rare commodity. The gold or silver standard became the norm. Gresham's law kicked in whenever sovereigns yielded to the seductive charms of debasement by reducing the gold content of the currency, or jettisoning the linkage altogether — usually in times of financial or fiscal stress, such as during wars. Countries were eventually constrained to restore the gold standard. Are we seeing this all too familiar cycle repeated all over again?

The restoration of the gold standard after World War II through the Bretton

These are the personal views of the author.

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Woods system followed this familiar pattern. Countries were however given some leeway in printing currency in excess of their stock of gold. Unsurprisingly, under the prevailing Keynesian paradigm, the State soon succumbed to the temptations this flexibility afforded, leading to a growing imbalance between dollars printed and the underlying gold stock. The world went off the gold standard in 1971. The value of major currencies was now determined through floating exchange rates. Bretton Woods II marked the beginning of the era of fiat money.

This unlimited flexibility to print money unsurprisingly culminated in hyperinflation. Under Bretton Woods II money supply tended to increase much faster than the gross domestic product (GDP), even though annual GDP growth was much higher than what it was in the pre-industrial period. Hyperinflation was rare in the period before fiat currency, as growth in money supply was capped by the availability of the rare commodity from which money was minted. Indeed, price stability bordering on deflation was the norm, the few episodes of high inflation being linked to new sources of bullion, such as the discovery of new mines, or from the Americas during the Spanish conquests. The supply of gold increased much faster than GDP which grew at a snail's pace in the pre-industrial era. As the additional supply tapered off, deflationary tendencies reasserted themselves.

It was soon recognised that fiscal policy was hostage to the political system, easy to roll out but difficult to roll back. The mantle of macroeconomic stabilisation gradually devolved on independent central banks. Monetary policy also became more rule-bound, with most central banks adopting variants of the "Taylor Rule". This typically entailed using the benchmark short-term interest rate as the monetary policy tool to fix the price of money in such a manner that the economy moved towards its price and growth targets.

On account of underdeveloped financial markets and financial repression, monetary policy tools were relatively ineffectual in developing countries. As a result they continued to rely on the

politically sensitive fiscal tool for macroeconomic management, while using monetary policy mostly for management of the external sector (to maintain competitive exchange rates) as part of an overall strategy of export-led growth. As a result, fiscal excesses (deficit financing through central bank purchase of government debt — a species of QE!) and resultant high rates of inflation continued. By the turn of the century, however, as their financial systems developed, developing countries increasingly turned to fiscal prudence, with central banks doing more of the heavy lifting for macroeconomic management. Inflation rates dropped sharply in developing countries. According to the International Monetary Fund (IMF) World Economic Outlook database, average consumer price inflation in developing countries was 44.5% in the last decade of the 20th century. By the first decade of the 21st century, this was down to single digits, where it has remained ever since.

With improved fiscal management, developing countries started phasing out their own variant of QE (buying their own sovereign bonds). Instead, as their external surpluses grew, they started purchasing sovereign bonds of reserve currency issuing countries on a large

scale. Ironically, as Bretton Woods II broke down in the wake of the global financial crisis, reserve currency issuing countries now embarked on QE through unconventional monetary policies which entailed buying their own sovereign bonds on a breathtaking scale.

Global Financial Crisis and QE

It was long known that the limits of conventional monetary policy are reached when inflation rates drop, the output gap grows, interest rates are lowered to the zero bound, and there is still little demand for credit. This is the liquidity trap, into which Japan fell in the 1990s, and much of the developed world in the wake of the global financial crisis.

In such circumstances central banks may be constrained to resort to unconventional monetary policy, expanding money supply not only through the conventional discount window, but also through purchase of bonds, mostly government. This is now known in popular parlance as QE. This neutralises the sharp decline in the money multiplier due to rapid deleveraging in a financial crisis and can be expected to stimulate growth by increasing both investment (by keeping the cost of credit cheap) and consumption (through the wealth effect

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of appreciating asset prices). With the interbank market badly disrupted by a general loss of confidence that is to be expected in a major financial crisis,¹ reserve balances credited to the accounts of depositary banks held with the Federal Reserve as a consequence also facilitate banks to square their transactions with each other at the end of each day.

Forestalling deflation was the signal triumph of QE during the financial crisis. Massive liquidity injections have neutralised the sharp fall in the money multiplier (MM) caused by deleveraging.

The first real-life experiment with QE was in Japan following the financial crisis triggered by the collapse of the real estate boom in the 1990s. The Japanese experiment however could prevent neither deflation nor recession. Ben Bernanke famously argued before he became Chairman of the us Federal Reserve that this was because Japanese QE was far too timid (Bernanke 2003). In hindsight, in the light of the much more aggressive QE by the Federal Reserve and other advanced economy central banks during the crisis, and the fact that the us avoided deflation, this is a fair argument.

Why should QE in developing countries have resulted in high rates of inflation, whereas QE in developed countries has not (indeed, they are still struggling to keep deflation at bay)? The answer to this puzzle possibly lies in the fact that QE in developing countries was mostly conducted in overheated macroeconomic environments characterised by supply constraint, whereas QE in advanced economies is being conducted in demand-constrained economies operating below capacity. In developing countries QE increased money supply, whereas in advanced economies QE has mostly increased the monetary base with a good chunk of the liquidity injection finding its way back to the central bank as reserves in view of a lack of credit demand through a decline in the MM, as given in Table 1.

An additional reason for the differential price outcomes of QE is that increase in money supply as a consequence of QE in developing economies depreciated their currencies as there was no external

Table 1: US Money Supply and the Federal Reserve Balance Sheet

US Trillion	M2	M0	MM M2/M0	Reserves	Currency M0-Reserves	Balance Sheet
1 March 2007	7.13	0.81	8.80	0.04	0.77	0.87
1 November 2007	7.42	0.83	8.94	0.04	0.79	0.89
1 March 2008	7.62	0.82	9.30	0.04	0.78	0.88
1 November 2008	7.99	1.43	5.59	0.06	1.37	2.08
1 March 2009	8.34	1.64	5.09	0.08	1.56	1.90
1 November 2009	8.47	2.01	4.22	1.14	0.87	2.17
1 March 2010	8.48	2.10	4.04	1.19	0.91	2.28
1 November 2010	8.75	1.97	4.44	1.04	0.93	2.30
1 March 2011	8.90	2.40	3.71	1.44	0.96	2.55
1 November 2011	9.60	2.60	3.69	1.59	1.01	2.82
1 March 2012	9.78	2.65	3.69	1.61	1.04	2.89
1 November 2012	10.29	2.64	3.90	1.55	1.10	2.83
1 March 2013	10.52	2.93	3.59	1.76	1.17	3.20
1 November 2013	10.92	3.68	2.97	2.46	1.22	3.85
1 March 2014	11.17	3.89	2.87	2.71	1.18	4.17
1 November 2014	11.51	3.87	2.97	2.56	1.31	4.49
Change 2007–14	4.38	3.06	-5.82	2.52	0.54	3.62

Source: <http://www.federalreserve.gov/>

demand for their currencies. This added to inflationary pressures. There is, however, a big international demand for reserve currencies, including by developing countries themselves, which prevents them from depreciating sharply, especially since the four major reserve currency issuing areas (us dollar, pound sterling, Japanese yen and the euro) have all embarked on aggressive QE.

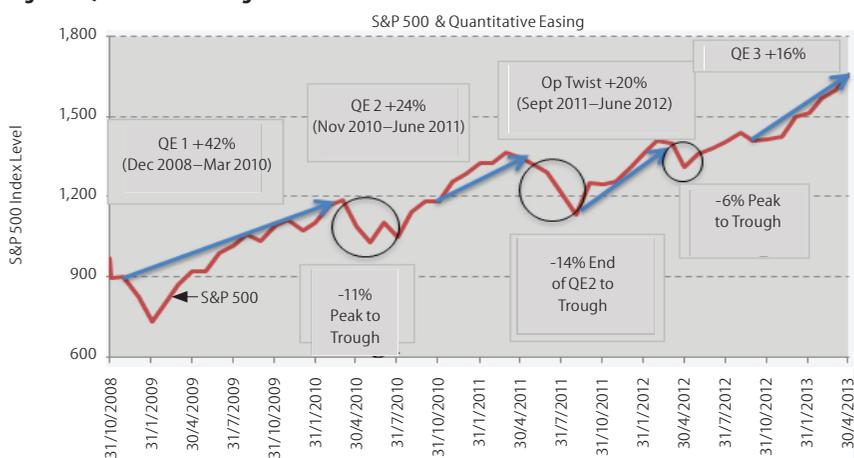
The Helicopter Drop

While the “bond financed tax cut” may have averted both deflation and hyperinflation to date, it has failed in restoring robust growth. Table 1 indicates that as much as 70% of the liquidity pumped

in by central banks through asset purchases has been washed back to the central bank as reserves. The resultant sharp fall in the MM is, in a sense, a measure of the liquidity trap. Sharp asset price inflation, as evident in the widening gap between asset prices and consumer prices, is, in a sense, another measure of the liquidity trap. That banks have returned to profitability despite a stagnant economy is the very essence of this liquidity trap.

Figure 1, originally published on the Canadian student website DayOnBay, illustrates the close correlation between the Standard and Poor's (S&P) 500 (proxy for asset prices), and each episode of QE.

Figure 1: Quantitative Easing and the S&P 500



Source: Google Finance/Bloomberg

Source: Reproduced from Michael Snyder, “How Will the Stock Market React to the End of Quantitative Easing?”, 26 October 2014, <http://theeconomiccollapseblog.com/archives/how-will-the-stock-market-react-to-the-end-of-quantitative-easing>

The chart ends on 30 April 2013. The s&p index continued to climb thereafter to scale 2000, in tandem with the expansion of the Federal Reserve balance sheet — all against the backdrop of an ailing economy.

So, would a “money financed tax cut,” where the central bank simply injects freshly minted money into the economy, say by giving money directly to the treasury or mailing cheques to households,² instead of purchasing treasury or private assets, work, as argued by Adair Turner? This is the famous “helicopter drop” (HD) of Milton Friedman (1969, chapter 1) and advocated so strongly by Ben Bernanke some time ago that he has been known as “Helicopter Ben” ever since.

In several respects the outcomes of HD are similar to those of QE. But the differences are also critical. In QE, liquidity is injected into financial markets through purchase of bonds by the central bank. This increases money supply. However, in a liquidity trap³ much of this can be washed back to the central bank as

reserves, leading to a fall in the MM. The expected increase in credit and money supply does not take place. Thus much of the purchase of treasury and housing mortgage bonds by the us has been financed through this backwash rather than through actual monetisation.

A sharp increase in money supply can however take place subsequently if the demand for money increases, and banks start withdrawing the reserves. This is when the actual large-scale monetisation could occur. The increased money supply could occur through a mix of monetisation and increase in the MM. This could lead to inflation, or even hyperinflation as the size of these reserves is over twice the entire currency in circulation

The central bank can of course apply brakes by shrinking its balance sheet through selling bonds. Selling bonds on a large scale can however lead to a sharp fall in their price, and a consequential sharp rise in interest rates which could derail the incipient economic recovery. It could also lead to huge losses for the

central bank, which would eventually end up as higher public debt, blurring the distinction between monetary and fiscal policy. To avoid this, the central bank may attempt to hold the bonds to maturity, and still keep liquidity in check by raising the interest rate it pays on reserves.⁴

Holding bonds to maturity might enable central banks to avoid large capital losses, but the fiscal outcome may be little different as its current income would take the hit on account of higher interest payments on reserves. It would also not be able to avoid a sharp rise in interest rates. In such a situation the interest paid on reserves of depositary banks, and the reverse repo rate for non-depositary (including shadow) financial institutions, are likely to overshadow the familiar Fed Funds Rate (FFR)⁵ as the critical monetary policy instrument. In a helicopter drop, the excess liquidity can be rolled back through allocation of new treasury bonds directly to the central bank, or through reverse repo operations. The interest rate outcomes would however be no different from that of QE.

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Central banks in advanced countries may have trapped themselves into having to take huge hits on their balance sheet, in addition to having to work their way through a new trilemma of trade-offs between growth, inflation and financial stability. There is still little clarity on how this complex situation would be handled as there is no real life precedent for central banks to follow or learn from. The Japanese QE was relatively straightforward in comparison — easy to roll out and roll back.

The advantage of the HD over QE appears to lie in the fact that the central bank can bypass the financial system at a time monetary policy transmission channels are impaired, and provide liquidity directly to the end user. The money can be used to spend on infrastructure and pay down debt, both public and private, that is suppressing demand growth. And it would appear to do so without creating additional leverage, which lay at the root of the recent global financial crisis.

Concluding Remarks

HD is perhaps the final arrow that remains in the quiver of central banks. This quiver was till recently strapped to the back of the person whose name is indelibly linked with this arrow. But why did he never draw this arrow despite the limited success with QE? Once the global financial crisis hit, and the zero bound was actually reached, he turned much more cautious, arguing that monetary policy was not the panacea for America's problems (Ball 2012). This was recognition that there were limits to what macroeconomic policies can achieve when the underlying problems are structural, not cyclical. Adair Turner seems to think that macroeconomic policies can do more — through the HD.

HD remains virgin, uncharted territory, however. It is the final monetary frontier. Central banks are understandably nervous that this is an untried, if powerful, double-edged tool capable of unknown collateral damage. Hyperinflation may be the more benign collateral damage, as this is a chartered territory for which central banks have time-tested tools. But far worse is a scenario where the central bank, perceived as a conservative

and stabilising institution, is seen to be striking at the very roots of financial intermediation by destabilising money itself, unmooring it from all the familiar anchors such as savings, debt or any nominal anchor. In yet another vindication of Gresham's law market participants might reach for gold. Recent price trends of gold, and large purchases by central banks,⁶ especially in emerging markets, should caution us that this may have already begun. Fiat currency is an experiment barely half a century old. This is but a small drop in the long history of money spanning millennia during which it was almost always anchored to a scarce commodity that served as a credible measure of universal value.⁷ The power of money creation needs to be used prudently and with great forbearance by finance ministries and central banks if fiat money is to remain a credible measure of universal value going forward.

NOTES

- 1 The Libor–OIS and Treasury–Euro Dollar (TED) spreads are widely used measures of the health of the inter-bank market. These spreads are normally narrow, usually below 30 basis points. At the height of the crisis these spreads however breached 400 basis points and liquidity dried up. The daily turnover remained low even when spreads normalised.
- 2 Since HD, or outright money creation, has never been done so far, and there is no precedent, there is a great deal of speculation regarding how exactly this could or should be done. Indeed, some experts like Paul Krugman believe that effectively a bond-financed and money-financed tax cut are to intents and purposes are the same because the central bank is also a part of government (Krugman 2013). Ben Bernanke, and more recently, Adair Turner, however made a distinction between the two, and the present writer subscribes to the latter view. QE has an underlying debt liability whereas HD does not.
- 3 A liquidity trap can arise from either the demand or supply side. Both factors seem to be at work. On the demand side, investment is stagnant, while households are paying down debt. On the supply side, financial institutions are hoarding liquidity as they struggle to provision for dodgy debt and meet the new Basel III capital adequacy norms.
- 4 The Federal Reserve may find this much more difficult to do than the Bank of Japan in 1990s because of the big difference in maturity profiles. The Bank of Japan could unwind its balance sheet fairly quickly because its asset purchases were mostly short term. The Federal Reserve, however, churned the maturity profile of its portfolio by selling short-term bonds and buying long-term bonds as part of its credit easing “operation twist” to lower long-term interest rates. Credit easing differs from quantitative easing in that it impacts interest rates and credit markets without necessarily expanding the balance sheet.
- 5 The New York Federal Reserve has been making “dry runs” of the reverse repo instrument in financial markets. Mackenzie and Alloway (2014a, 2014b).
- 6 Gold has remained an important part of the reserve portfolios of central banks, especially in developed countries. However, it quietly went out of favour since 1990s as interest bearing sovereign bonds in the US and Europe acquired greater importance. From 2010, however, central banks have again become net buyers of gold. The World Gold Council, “Central bank diversification strategies, rebalancing from the dollar and euro,” February 2013, http://www.gold.org/sites/default/files/documents/Central_bank_diversification_strategies_paper.pdf
- 7 In a recent interview with the *Financial Times* of London, this is what Alan Greenspan, former governor of the US Federal Reserve had to say about central banks tanking up on gold: “Why do central banks put money into an asset which has no rate of return, but [has] cost of storage and insurance and everything else like that? Why are they doing that? Gold is a currency. It is still, by all evidence, a premier currency. No fiat currency, including the dollar, can match it” (Tett 2014).

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