Lessons from the Bank of England on 'quantitative easing' and other 'unconventional' monetary policies ☆

Victor Lyonnet [a,b], Richard Werner [a,c,*]

[a] Centre for Banking, Finance and Sustainable Development, School of Management, University of Southampton, SO17 1BJ Southampton, United Kingdom
[b] Dept. of Economics, Sciences-Po-Paris-Sciences, 28 Rue des Saints-Pères, 75007 Paris, France
[c] Goethe University, House of Finance, Grüneburgplatz 1, 60323 Frankfurt, Germany

ARTICLE INFO

ABSTRACT

This paper investigates the effectiveness of the 'quantitative easing' policy, as officially implemented by the Bank of England since March 2009. A policy of the same name had previously been implemented in Japan, which serves as a reference. While the majority of the previous literature has measured the effectiveness of QE by its impact on interest rates, in this paper the effectiveness of all Bank of England policies, including QE, is measured by their impact on the declared goal of the QE policy, namely nominal GDP growth. Further, unlike other works on policy evaluation, in this paper we use the general-to-specific econometric modelling methodology (a.k.a. the 'Hendry' or 'LSE' methodology) in order to determine the relative importance of Bank of England policies, including QE. The empirical analysis indicates that QE as defined and announced in March 2009 had no apparent effect on the UK economy. Meanwhile, it is found that a policy of 'quantitative easing' as defined in the original sense of the term (Werner, 1995c) is supported by empirical evidence: a stable relationship between a lending aggregate (disaggregated M4 lending, singling out bank credit for GDP transactions) and nominal GDP is found. The findings imply that the central bank should more directly target the growth of bank credit for GDP-transactions, which was still contracting in late 2011. A number of measures exist to boost it, but they have hitherto not been taken.

1. Introduction

Quantitative monetary targets were the mainstay of monetary policy in the early 1980s. Later that decade, however, most central banks abandoned this approach, since it was considered to have failed. As Werner (2012) argues, this failure was largely due to the perceived instability of velocity and the money demand function in many countries since the 1980s. Since then central banks have emphasised interest rate policies in their official statements, and central bank watching has come to focus on interest rate decisions and how actions of central banks might affect interest rates, in line with the 'new monetary policy consensus', as proposed, among others, by Woodford (2003).

The interest rate-centred approach to monetary policy implementation became predominant despite a conspicuous absence of empirical evidence that interest rates are negatively correlated with economic growth in a consistent and robust manner, and that statistical causation runs from interest rates to the economy. Over the prior three decades it had gradually become an increasingly open secret that in empirical studies interest rates often did not 'behave well'.[1]

---

[1] See Werner (2005), as well as Werner and Zhu (2011), and the empirical studies cited therein. The latter present a new empirical analysis of the relationship between interest rates and growth in four major economies (US, UK, Germany and Japan) and found the evidence not supportive of standard theoretical suppositions. See also the citations in Werner (2012), some of which are reproduced here for convenience: "King and Levine (1993) did not find evidence to support the hypothesised relationship between real interest rate and economic growth in a cross-section of countries. Taylor (1999) found that the link between real interest rates and macroeconomic aggregates such as consumption and investment is tenuous." " Kuttner and Mosser (2002) pointed out the positive correlation between GDP growth and interest rates in the US between 1950 and 2000. Dotsey, Lantz, and Scholl (2003) examined the behaviour of real interest rates. Their results disclosed that the real interest rate series is contemporaneously positively correlated with lagged cyclical output. Other studies finding a positive correlation between interest rates and growth include Gelb (1989) and Polak (1989). This positive relationship between interest rates and growth is also acknowledged in a leading textbook in advanced macroeconomics (Sorensen & Whitta-Jacobsen, 2010)".

The interest rate-based monetary consensus encountered a further major empirical challenge when more than a dozen interest rate reductions over a decade failed to stimulate the Japanese economy in the 1990s. The Bank of Japan had previously been one of the major supporters of the interest-based approach, arguing that due to their preference for interest rate smoothing they could not also control the money supply. This approach was unceremoniously abandoned on 19 March 2001, as the Bank of Japan reverted to a regime of targeting quantitative monetary aggregates, namely bank reserves, while using open market operations to achieve it. Despite signifying a return to standard monetary targeting of the type that had been abandoned in the 1980s (in fact the oldest form, namely 'narrow money' targeting), the policy was, from 2002 onwards, presented as 'new', primarily by choosing a relatively new expression to describe it — 'quantitative easing' (QE) (see Voutsinas & Werner, 2010). In March 2009, the Bank of England followed suit and announced the introduction of 'quantitative easing', in circumstances that resembled the Japanese ones in a number of ways. The Federal Reserve also adopted a variety of new measures, many of which also centred on monetary operations defined by the quantity of injected funds, rather than their price — although avoiding the expression 'quantitative easing' in official statements.[2]

While the interest rate consensus view of monetary policy seemed to survive the Japanese challenge – Japan sometimes being dismissed as an outlier – the North Atlantic banking crisis and monetary policy responses by the Federal Reserve and Bank of England exposed its flaws.

This dramatic shift in monetary policy regimes from prices to quantities calls for a thorough evaluation of the effectiveness of recent measures. Surprisingly, studies of their effectiveness have however focused on analysing their impact on interest rates.[3] This seems counterintuitive, since they had been adopted precisely because the interest rate based approach had been abandoned by central banks, and despite the fact that researchers failed to provide any evidence that interest rates are in a stable relationship with a final target variable such as nominal GDP. If nothing else, this underlines the extent of the prior dominance of the interest rate based approach. It would seem that the prior preoccupation with interest rates has left an indelible mark in the minds of economists, many of whom take it for granted that it is sufficient to evaluate whether a policy tool affects interest rates.

This focus on analysing the effect of QE (or similar policies) by their impact on interest rates has left researchers and policy-makers with little information about the effectiveness of such policy in influencing the macroeconomic variables that matter most to governments, central banks and the public at large. Voutsinas and Werner (2010) suggested therefore to examine the effectiveness of monetary policy in a nested general model of an ultimate goal that most stakeholders could agree with: nominal GDP growth. They employ this for an analysis of the accountability of the Japanese central bank, utilising the general-to-specific econometric modelling methodology (a.k.a. the 'Hendry' or 'LSE' method, following Hendry & Mizon, 1978). The final policy target of nominal GDP growth is regressed on a large number of explanatory variables, potential and actual tools and intermediate targets that were actually or could have been deployed by the central bank. With this approach, the effectiveness of actual and potential tools or intermediate

targets can be empirically evaluated, including the significance of new policy regimes. They find no evidence that the reserve expansion policy had been effective.

Another innovation is their use of disaggregated credit as one of the explanatory variables, on the basis that credit for GDP trans-actions is more likely to be in a stable relationship with nominal GDP, while credit for non-GDP transactions is associated with asset price movements (Werner, 1992, 1997c, 2005). This approach solves the problem of the 'velocity decline' that had confounded earlier attempts at identifying stable empirical models of nominal GDP.

In the present paper the Voutsinas–Werner methodology is employed for the first time to assess the effectiveness of the policy announced by the Bank of England in March 2009, which is also referred to as 'quantitative easing' (QE). The choice of nominal GDP growth as policy goal is particularly uncontroversial in the UK case, because the Bank of England has stated explicitly that the ultimate target of its policy is indeed nominal GDP growth. The Bank of England staff (Joyce, Lasaosa, Stevens, & Tong, 2010) stated that the policy of QE was adopted

"with the aim of … increasing nominal spending growth" (p. 1),

while

"…the effectiveness of the MPC's asset purchases [QE] will ultimately be judged by their impact on the wider macroecon-omy" (p. 5).

So far few empirical studies have been conducted on the UK case, and none adopting this methodology. According to Joyce et al. (2010)

"Our analysis suggests that the [asset] purchases [of the central bank] have had a significant impact on financial markets and particularly gilt yields, but there is clearly more to learn about the transmission of those effects to the wider economy" (p. 4).

It is the goal of this paper to investigate the transmission of monetary policy and the effect of particular tools and intermediate targets (actual and potential) "on the wider economy", as measured by nominal GDP.

We find that there is no empirical evidence that bank reserves, bond purchases, or even the maturity structure of central bank bond holdings – the key characteristics of the Bank of England's QE – have the predicted impact on nominal GDP. No evidence is found that the relationship between nominal GDP and its determinants changed in any way in March 2009. As a result, we conclude that we cannot demonstrate empirically that the new policy announced in March 2009 made any impact. Furthermore, the results suggest that the Bank of England would be well advised to give up targeting reserves and using bond purchases as its main policy tool, and instead adopt a policy of 'quantitative easing' defined in the original sense of the term as proposed in Japan in 1994 by one of the co-authors (Werner, 1995c, see below): Such a policy aims at expanding credit creation used for GDP transactions, and indeed a stable empirical relationship between a lending aggregate (disaggregated M4 lending for GDP transactions) and nominal GDP is found.

The findings imply that BoE policy should more directly target the growth of bank credit for GDP-transactions, as suggested in Werner (1992, 1994a,b,c, 1995a,c, 1997b,c, 2005) for post banking-crisis situations. In fact, despite the BoE's efforts, bank credit growth contracted by record amounts in late 2011, as a result of which the UK economy turned into a double-dip recession in the first half of 2012 — as was predicted by our model.

The paper is organised as follows: In Section 2, the historical origin of the term 'quantitative easing' is briefly discussed, followed by an overview of the Bank of England's monetary policy and use of this term. Section 4 reviews the literature on the effectiveness of QE. Section 5 implements a new test of the effectiveness of QE in the UK. Section 6 concludes.

---

[2] While the popular press and many observers have simply proceeded to refer to the Federal Reserve policies as 'quantitative easing', in official statements the Fed has conspicuously avoided this expression. The reason is probably the reluctance of the Chairman of the Board of Governors to adopt it, which Ben Bernanke explained in his LSE Lecture on 15 January 2009 (Bernanke, 2009). This further supports the interpretation of this policy that is advanced in this paper.

[3] See the papers mentioned below or the Bank of England's (2011) call for papers to its research conference on the 'effectiveness of quantitative easing' in November 2011, which focused on the potential impact of QE on interest rates, the term structure of interest or the yield curve, as witnessed by the selection of data prepared for potential participants by the Bank of England. Papers of the conference are due to be published in a feature in the *Economic Journal*. This paper was submitted for the conference, but rejected by the conference organisers, supporting the hypothesis that the Bank of England was mainly seeking studies on the impact of QE on interest rates.