Luke Heritage

Is quantitative easing effective?

Quantitative Easing (QE) is a multifaceted monetary policy tool, subject to scrutiny concentrated on the economic theory it is based on and its results. Hence, the effectiveness of QE is contingent upon the interpretation of its theoretical underpinnings, but also an assessment of its implications in practice.

How does QE work according to economic theory?

QE can stimulate economic activity in many ways, but it is most likely stimulated by increased asset prices such as bonds and stocks (Bank of England, 2023). On November 25, 2008, the Fed announced it would purchase mortgage-backed securities from the open market, and agency bonds issued by Government Sponsored Enterprises (GSEs) and Federal Agencies (Haltom and Sharp, 2014). This aimed to push up the prices of financial assets and thus in turn decrease the coupon on long-term maturing assets such as treasuries (Thornton, 2015) due to the inverse relationship between bond values and bond coupons. This would reduce long-term interest rates as a result of the positive relationship between interest rates and bond yields, which stimulates investment and consumption (Thornton, 2015). This shifts aggregate demand outwards, stimulating a growth in GDP, as producers extend their supply to maximise profits at a higher price level, ceteris paribus. Therefore, QE was helpful in 2008 when conventional tools such as the placement of the expansionary Zero Bound method, (reducing real interest rates to 0% to boost an economy) were not sufficient to effectively stimulate GDP. This meant that governments such as the US and the UK government looked to rely on unconventional monetary policy, namely QE.

QE theory was similar to monetarist ideologies developed by Milton Friedman and Anna Schwartz (1963) where a change in the supply of money is essential in influencing an economy's direction. However, they demonstrated scepticism towards hyper-expansionary monetary policies, emphasising the importance of stable monetary growth to maintain economic stability (Friedman and Schwartz, 1963) which QE does not necessarily consider. Keynesian economists generally view QE as a potentially effective tool to address economic struggles like the one of The Great Recession. This is because QE addresses problems including demand management, liquidity traps (Palley, 2013) and deflation (Annunziata, 2011).

QE is typically seen as exogenous money creation, where a central bank purposefully injects money into the banking system or financial sector as a whole. Monetarists would typically argue that an increase in the money supply increases the reserves of commercial banks, increasing the willingness of commercial banks to lend, increasing investment and consumption, and stimulating AD. However, using the theory of endogenous money creation, the supply of money in the financial system can largely be determined by internal factors, not just external injections. An example could be the demand for loans by producers, where their demand for loans is derived from their financial needs for the raw materials or factors of production for the production process (Moore, 1988). In a time of low animal spirits, which is when QE is likely to be used, demand for these loans is not likely to be high. So even when liquidity is improved, QE may be seen as ineffective as the demand for these loans is not high enough, halting endogenous money creation, and leaving a sluggish increase in the money supply (Keeble, 2023). This means that the theoretical effectiveness of QE will depend on the level of animal spirits.

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How did QE aim to function in practice?

QE functioned through four transmission channels into the economy (Haldane et al., 2016; Joyce et al., 2011). These channels include a portfolio rebalancing channel, an asset price channel, a bank lending channel and an expectations or signal channel (Deleidi and Mazzucato, 2018). Other channels exist such as the interest rate channel and the exchange rate channel, however, these are less likely to be affected by only QE, but potentially by other factors like cost-push inflation or imported inflation.

The portfolio rebalancing channel consists of the replacement of government bonds with deposits earning zero interest that are then likely to be held within the banking system. Once the central bank introduces this, demand is stimulated for other financial assets that earn higher yields, effectively allowing economic agents to rebalance their portfolios to earn a desired amount (Deleidi and Mazzucato, 2018), stimulating demand for higher coupons on other assets such as corporate bonds (Albertazzi et al., 2018). This means that QE can successfully stimulate AD.

The bank lending channel is relatively simple and pertains to an increase in the money supply of banks, increasing the liquidity of the banking system, thus allowing for increased borrowing in the economy, and stimulating consumption. Additionally, with the nature of QE, interest rates are likely to fall, ceteris paribus, incentivising further demand for loans (Dhital et al., 2023). Evidence of this could include the implementation of QE in Japan after a period of zero interest-rate policy between 1999-2000 that started in 2001 (Fasano-Filho et al., 2012), where a positive effect occurred on Japanese banks' liquidity positions regarding their lending channel, suggesting that Japan's implementation of QE may have amplified the distribution of credit in Japan (Bowman et al., 2015) (Butt et al., 2014), demonstrating the potential effectiveness of QE through bank lending. However, due to limited evidence that QE operated through a bank lending channel during the UK and US QE programmes, its effectiveness remains inconsistent. The bank lending channel relies on animal spirits, and not just an increase in commercial bank reserves, as an increase in the reserves of commercial banks does not necessarily lead to increased loans (Sieroń, 2019).

The asset price channel includes the purchasing of financial assets by a central bank that happens within QE which pushes up the price of these assets in the economy thus increasing overall wealth (Lenza and Slacalek, 2018; Deleidi and Mazzucato, 2018). This creates a potential emergence of a "wealth effect" (Schooley and Worden, 2008). This certainly may stimulate AD in the economy, but this depends on whether this wealth is distributed among a large percentage of the population. The impact of the wealth effect may also depend on the level of animal spirits in an economy, where consumers or producers may choose to save due to economic uncertainty, even if they feel wealthier.

The expectations or signal channel refers to announcements that may increase animal spirits. A QE announcement signals to the financial sector that the central bank is planning to reduce interest rates, meaning markets are likely to gain more confidence, reducing long-term risk premiums which in turn can then increase asset prices (Deleidi and Mazzucato, 2018) and potentially constructing further benefits including the previously mentioned "wealth effect". This connotes how all these channels are interlinked, and in the case of the UK, these channels function together (Kaminska and Mumtaz, 2022), increasing the effectiveness of QE.

Do related statistics prove that QE was effective?

Although it is difficult to provide specific statistics towards all of these channels, statistics exist that are relevant enough to evaluate the success of QE. For example, the decrease in long-term bond yields would be a success of the QE scheme as it would indicate an increase in bond values which relates to the asset price channel. The coupons earned on relatively long-term maturing treasuries (10 years) reached 5.19% on July 2nd 2007, with a 5.22% Fed funds rate (Macrotrends). However, on the 22nd December 2008, the coupon on 10-year maturing treasuries fell to 2.16%, coincidentally just after QE1 (the first implementation of QE) with a reduction of the Fed funds rate to 0.09% (Macrotrends). When QE2 started, the Fed announced a programme to purchase additional securities (Ailani, 2023). There was a significant decrease in the 10-year treasury yield, falling to 2.58% on November 1st 2010 from 3.90% on April 5th 2010 (Macrotrends). Therefore, the implementation of QE does directly affect the value of coupons earned on treasuries and the value of these treasuries, indicating that QE has worked through the asset price channel (Krishnamurthy and Vissing-Jorgensen, 2011). Using these statistics, QE may have also worked through the signalling channel due to a huge reduction in the Federal funds rate to 0.09% in December 2008, and a low value of 0.21% in November 2010 (Macrotrends). It is difficult to measure animal spirits in an economy, however, the GDP growth rate of the US increased to 2.71% in 2010 from -2.6% in 2009 (Macrotrends), indicating economic growth at a time of low Federal funds rates. Excluding other variables, this may justify QE's success, as it worked through the signal channel and the asset price channel, achieving economic growth in the process. Therefore, when using numbers that relate to both channels, paired with economic theory into the relations of bond values, interest rates and coupons, it is clear to see that success has come about regarding these specific channels, ultimately caused by the implementation of QE, particularly in the US.

What are the criticisms of QE?

With the recent monetary decisions of the US and UK, it is almost as if any positive impacts of QE have been reversed. Both the Federal Reserve and the Bank of England are now unwinding their balance sheet holdings of treasuries and gilts by using a new contractionary policy of Quantitative Tightening (QT) (Ramsden, 2023). This unwinding of balance sheets is occurring during a period of high inflation in both countries meaning that bond yields are rising once again due to high interest rates that are combatting inflation, reversing any positive effects made through the asset price channel after QE. 10-year maturing treasury yields reached a maximum height of 4.78% in October 2023 and 10-year maturing gilt yields reached 4.76% in August 2023 (Macrotrends). This creates two large losses: interest losses and devaluation losses (Martin and Smith, 2022).

As previously stated, interest rates, especially in the UK, have been raised to combat high levels of inflation, with the UK base rate reaching 5.25% as of December 2023 (Macrotrends). This is therefore the rate at which the Bank of England is borrowing money to fund the Asset Purchase Facility (APF) that holds all their securities. However, the yield that the Bank of England earns on these securities is lower than the rate at which they are borrowing the money to fund its storage, thus creating a marginal interest loss just to hold these assets (Martin and Smith, 2022). This loss of money is indemnified by the HM treasury (Hinge, 2022), carrying an opportunity cost for the economy. This is because the government must direct more spending to cover the Bank of England's losses, meaning less

is spent on improving the public sector. This in turn theoretically reduces economic growth and reverses any positive impacts of QE.

Due to the increasing coupons on gilts, especially in the UK, devaluation losses occur in the Bank of England's APF. This is due to the Bank of England utilizing QT where they are selling their gilts (active QT), rather than allowing them to mature like the Federal Reserve is doing (passive QT) (Young, 2023). These gilts are being sold for a lower price to the open market than they initially paid for them, creating a marginal loss due to their devaluation, creating central bank losses, which decreases government spending on the economy because of indemnification (Martin and Smith, 2022). A decrease in government spending may fail to stimulate economic growth as less spending on updating antiquated infrastructure may result in reduced output in certain sectors. Therefore, QE has forced some central banks to use QT which is an economically harmful policy and will reduce any positive effects initially created from QE.

Conclusion

Overall, the judgment of whether QE works is subjective. In practice, QE creates too many long-term problems that have resulted in the use of QT which is a very harmful implementation: a policy only in use because of QE. The reason for its theoretical success is the short-term effects that QE may successfully achieve, such as asset price increases, bank lending channel success and wealth effects. Despite that, it is too complicated to work successfully in practice, as theories and models fail to acknowledge the long-term and unintended consequences. These consequences include harmful asset price inflation, the use of QT, and potential contractionary economic growth. QE is not entirely ineffective in practice since it has accomplished short-term objectives, but it is likely to be harmful in the long run.

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