



Understanding Quantitative Easing

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February 10, 2014

ABSTRACT

Many misunderstandings are still circulating about the actual operational aspects and impacts of Quantitative Easing, also known as Permanent Open Market Operations or Large Scale Asset Purchases. This brief primer will provide a series of basic understandings that give the reader better insights as to the actual impacts of the program and how it works with the hope of clarifying some of the misconceptions.

“Quantitative Easing” (QE) is a form of open market operations that helps the Federal Reserve achieve its policy targets. For odd reasons, this program has garnered a certain mythical prominence in the media and in the investment universe. The truth, however, is that QE involves open market operations not much different from the way the Federal Reserve always achieves its policy targets.

When you hear that the Federal Reserve is changing their target interest rate this will generally involve open market operations that alter reserves in the banking system in order to achieve this rate. QE involves permanent open market operations, which deviate from standard policy in that they tend to purchase varying assets from the private sector. The NY Fed elaborates:

“The purchase or sale of Treasury securities on an outright basis adds or drains reserves available in the banking system. Such transactions are arranged on a routine basis to offset other changes in the Federal Reserve’s balance sheet in conjunction with efforts to maintain conditions in the market for reserves consistent with the federal funds target rate set by the Federal Open Market Committee (FOMC).”

Open Market Operations always involve altering the outstanding reserves in the banking system in order to help achieve a target interest rate. QE is not unique in this regard although it is believed to have some sort of mythical powers that extend beyond standard open market operations. This is largely due to poor reporting in the media and a general misunderstanding of the way QE impacts the banking system and the economy.

QE’s efficacy is highly controversial as its transmission mechanism relies on effects that are different from standard monetary policy. This includes the expectations channels, the portfolio rebalancing effect, the wealth effect, interest rate channels and other impacts on the economy. Before we get into the impacts of QE it helps to formulate a basic understanding of the way QE works at an operational level.

Understanding a QE Transaction

To better understand QE it's easiest to condense the accounting into the two basic ways in which QE transactions occur. The first scenario is when a bank sells t-bonds to the Fed. The second scenario is when a non-bank sells the t-bond and a bank merely acts as an intermediary.

Scenario 1 – Bank sells \$100 in t-bonds to Fed

Federal Reserve balance sheet:

Change in Assets = +\$100

Change in Liabilities = +\$100

Change in Net Worth = \$0

Banks balance sheet:

Change in Assets = \$0 (t-bond is swapped for reserves)

Change in Liabilities = \$0

Change in Net Worth = \$0

Scenario 2 – Non-bank sells \$100 in t-bonds to Fed where bank acts as intermediary

Federal Reserve balance sheet:

Change in Assets = +\$100

Change in Liabilities = +\$100

Change in Net Worth = \$0

Banks balance sheet:

Change in Assets = +\$100 (reserve assets increase)

Change in Liabilities = +\$100 (deposit liabilities increase)

Change in Net Worth = \$0

Non-bank public balance sheet:

Change in Assets = \$0 (non-bank sells t-bond and obtains deposit)

Change in Liabilities = \$0

Change in Net Worth = \$0

In both scenarios the private sector has the same net financial assets before and after QE occurs. So it's best to think of QE as an asset swap that alters the composition of the private sector's financial assets, but does not ADD net financial assets. The key understanding from the basic accounting is that permanent open market operations merely change the composition of outstanding private sector assets. That is, the Federal Reserve, through its open market operations, is changing the composition of the private sector's assets from bonds to bank deposits/reserves. This is, in many ways, like changing a savings account to a checking account. You would never describe yourself as being "wealthier" after this transaction even if you might technically describe yourself as having more liquid "money".

If QE doesn't increase the net worth of the private sector then what does it do? The main effect of QE is in the way it alters the composition of outstanding financial assets. The reduction of the supply of US government bonds puts downward pressure on interest rates by increasing the demand for other bonds. This can result in price increases (the "wealth effect) and a portfolio rebalancing which leads to an indirect increase in private sector net worth. The interest rate channel can also help to stimulate investment by helping to maintain an accommodative interest rate structure. This can also directly impact carry trades through the way financial intermediaries borrow in one currency to finance investment in a different currency. This has been cited as a potential cause of the boom in some emerging market economies in recent years.

One of the more controversial impacts of QE is via the "expectations channel". Because QE has a powerful psychological impact it could potentially lead to price increases in asset markets and help to maintain an environment where businesses and consumers remain more likely to spend and invest because they believe that the Federal Reserve is likely to remain accommodative. So QE's primary effects are indirect results of the asset purchases.

It's also important to note that QE can vary in terms of its implementation. For instance, at present the Federal Reserve targets a particular size of the program and lets the price of assets float. In theory, the Fed could target price as it does at the short end of

the curve. In other words, the Fed could announce that it is setting a long-term interest rate target for 10 year government bonds. Or it could set the exchange rate relative to foreign currencies. In this way, QE has varying ways in which it can be implemented and its impacts could vary depending on how this implementation takes place.

Pros, Cons & Myths About QE

Like all open market operations, QE involves altering reserve balances in the banking system and does not add net new financial assets to the private sector. Some of the more common myths about QE are discussed briefly below:

Is it right to call QE “monetization”? We have to be very precise in explaining the idea of debt monetization and how it pertains to QE. When we understand the various environments in which QE can occur we have to consider that QE can occur with a budget deficit or without a budget deficit. If the US government were running a budget surplus while also running the QE program it’s unlikely that anyone would refer to it as “debt monetization”. But it’s convenient to intermingle fiscal policy with monetary policy when considering the monetization myth. It’s important to understand that the idea of QE “funding” the US Treasury would likely mean that demand for US debt has dried up (that is, with a deficit, they cannot sell debt to the public due to a lack of demand). That’s very clearly not true and the end of QE2 proved this as yields declined and demand at US government bond auctions remained very strong despite the end of the program.

It’s important to make a distinction in these transactions between monetary policy and fiscal policy to avoid confusion. Some might be inclined to combine the two to imply that the Fed is directly financing the Treasury and causing the potential for inflation. But we should be clear about this. The Fed is buying bonds on the secondary market that have already been purchased. Further, it is implementing these transactions, not because there is a lack of demand for t-bonds, but because the Fed is trying to implement monetary policy. In other words, the Fed is not doing fiscal policy and it should not be implied that the Fed is necessary to achieve fiscal policy. That could be different in different circumstances, but it is not accurate at present.

It's true that the government could use the Fed to fund the US Treasury's spending, but that would involve a full blown rejection of bonds by the Primary Dealers and the private sector (something that would likely only occur during a very high inflation). In other words, the only time the Fed would be required to purchase bonds in a funding short-fall is in the case where the private sector refuses to purchase bonds and the Fed must fill the void. Clearly, given record high bond prices, declining bond yields and very strong demand at all auctions, the evidence that this is occurring is fairly weak. Therefore, for this analysis I am treating monetary policy and fiscal policy as separate policies.

QE in the form of buying back government debt is not necessarily “money printing” or “monetizing the debt”. QE, as shown in the examples above, is actually a pure asset swap (reserves for bonds). The private sector's net financial assets are the same though the composition changes. QE via a non-bank results in deposit issuance by a bank which might appear like monetization, but you must also note that the t-bond has essentially been unprinted because it is removed from the private sector and sits on the Fed's balance sheet where it has practically zero impact on the real economy (the Fed doesn't buy groceries at Wal-Mart after all). So QE via a non-bank can change the moneyness of the private sector's assets, but won't necessarily change the level of inflation since spending is a function of income relative to desired savings and QE doesn't directly change any of the variables in that equation. Therefore, the terms “money printing” and “monetization” must be explained in more detail and aren't applicable in the inflationary sense in which most people use the terms.

Will QE and an expansion of the monetary base lead to more lending? One of the more common beliefs regarding QE is that an expansion of the monetary base will eventually lead to an explosion in loans as banks “lend out” reserves to the public. The problem with this theory, is that banks never lend reserves so more reserves don't mean more lending. Loans create deposits. The money multiplier that we all learn in school is a myth. This is why QE1 and QE2 did not cause a surge in loans or inflation. Lending is a function of demand for debt from creditworthy borrowers. A greater supply of potential loans does not necessarily mean the loans will actually be made. So an increase in the monetary base does not lead to an increase in the M2 money supply.

The asset market “wealth effect” is a direct result of QE, right? As previously explained, QE reduces the number of specific assets in private sector supply so it can force investors out of one asset and into another. This can drive up prices, but does not necessarily drive up the fundamentals. It’s not unlike a stock buyback and its immediate effects which drive up price, but have no impact on the underlying corporation. In many ways, the “wealth effect” relies on a series of other confirming effects to justify the price increases. Therefore, QE’s “wealth effect” puts the cart before the horse. For instance, if a company is buying back its own stock and therefore reducing the supply of outstanding stock, this does not necessarily result in higher future prices unless the company can fulfill future investor expectations via expansion of business operations. QE or policies that alter the supply of financial assets does not necessarily achieve this effect. This doesn’t mean the “wealth effect” cannot have a meaningful impact on asset prices, but it depends on other factors in addition to merely the supply of assets.

It should also be noted that the portfolio rebalancing effect and the expectations channel of QE can cause disequilibrium in the economy through various misunderstandings and behavioral effects. This was most obvious during QE2 when imbalances in bond and commodity prices were taking place. For instance, there were widespread reports that commodity producers were hoarding supply due to inflation fears. The psychological impact of QE due to its many myths is extremely powerful. Some of this can be beneficial in providing forward guidance and setting expectations, however, because the program is widely misunderstood there are also risks to this effect.

QE will devalue the dollar and impact foreign trade, right? If the Fed does not target the exchange rate, QE does not alter the net financial assets of the private sector and therefore should not alter the value of the US dollar relative to other foreign currencies. Therefore, the idea that QE can have substantial trade impacts is misleading. The stability of the USD relative to other currencies during QE is clear evidence of this.

QE’s primary mechanism is through its ability to alter psychology thereby keeping rates lower than they might otherwise be. The magnitude of the rate effect is hotly debated and almost impossible to quantify. I think QE has some effect on rates and therefore positively impacts private investment and debt burdens. These are positive overall outcomes for the economy.

The QE Transmission Mechanism

While there are risks to QE it is not entirely ineffective. QE can impact the private sector in a number of ways. The following list is a brief rundown of the potential transmission mechanisms that can alter future economic outcomes:

- QE can alter long-term interest rates which can influence private investment and the creditworthiness of the private sector.
- QE has a powerful psychological impact on both asset prices and the economy and can alter expectations of future economic outcomes. Some economists call this the “expectations channel” or forward guidance effect.
- QE involves a portfolio rebalancing effect where the Fed’s intervention in the outstanding private sector assets can alter the asset options for private portfolio composition. Some economists refer to this as the “wealth effect”.
- QE alters the composition of the private sector’s assets by changing the “moneyness” of the private sector’s assets. Some might call this “monetization”, but it’s important to frame this correctly so as to avoid concluding that the Fed is “printing money”. While technically true, the Fed is also “unprinting” a T-bond.
- Depending on how the policy is implemented QE could potentially drive down the value of the dollar relative to other currencies which could alter foreign trade balances.
- QE can directly alter the value of private sector assets which can have wide ranging portfolio effects. In this regard the Fed acts as a market maker and lender of last resort which can be an extremely powerful policy tool when credit markets are unstable. For instance, during QE1 the Fed purchased MBS that were substantially discounted thereby marking up bank balance sheet holdings substantially.

On the whole, the impact of the various transmission mechanisms is hotly contested and largely unproven. Some reports point to fairly important changes in the economy while other reports have pointed to inconsequential impacts. What we know for certain is that QE has had a substantial psychological impact on the markets and its participants even if there appears to be no direct linkage to the economy. Therefore, understanding the market response requires a more in-depth understanding of QE. Understanding the actual impacts of QE can help us better gauge how investors are likely to respond to various policy changes and why. Since markets are largely the result of the behavioral responses of its participants it is important, at a minimum, to consider the psychological impacts these policies might have.