



## THE LAUNCH OF THE QE2

*“Christmas, with its spirit of giving, gives us all an opportunity to reflect on what we all most deeply and sincerely believe in — I refer, of course, to Money.”*

*— Tom Lehrer, in his introduction to “A Christmas Carol”*

### **FISCAL AND MONETARY POLICY**

A few months ago I sent out a note on the Government’s fiscal response to the financial crisis that reached its peak a couple of years ago.<sup>1</sup> Fiscal policy — taxation and public spending — is just one side of the economic policy equation. This note addresses the monetary side of the issue — money supply and interest rates. Where fiscal policy in the United States is the responsibility of Congress, monetary policy is the domain of the Federal Reserve, whose key deliberations take place in the Federal Open Market Committee. In November 2010, the Fed launched a second round of quantitative easing, which the press dubbed “QE2.” The action raised many questions, and in this note we’ll explore its possible impact on the economy. Here is the announcement the Federal Open Market Committee made after its meeting on November 3, 2010:<sup>2</sup>

To promote a stronger pace of economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate, the Committee decided today to expand its holdings of securities. The Committee will maintain its existing policy of reinvesting principal payments from its securities holdings. In addition, the Committee intends to purchase a further \$600 billion of longer-term Treasury securities by the end of the second quarter of 2011, a pace of about \$75 billion per month. The Committee will regularly review the pace of its securities purchases and the overall size of the asset-purchase program in light of incoming information and will adjust the program as needed to best foster maximum employment and price stability.

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<sup>1</sup> Jonathan Tiemann, “The Borrower of Last Resort,” August 4, 2010. In it I argued that while large public deficits always bear watching, they are not automatically catastrophic. Rather, at times Government can step in as borrower of last resort to stave off a deflationary collapse of credit. At <http://www.tiemann.net/Notes/LastBorrower20100804.pdf>.

<sup>2</sup> <http://www.federalreserve.gov/newsevents/press/monetary/20101103a.htm>

## QUANTITATIVE EASING

Quantitative easing is a euphemism for a policy in which a central bank purchases government bonds with cash it creates by fiat. It's "quantitative" because the Fed announced the quantity of securities it would be buying, rather than the interest rate it would be targeting, and it's "easing" because it adds liquidity to the financial system. Polite economists sometimes refer to such a policy as "monetizing the public debt;" critics, with some justification, call it "printing money."<sup>3</sup>

Because the Fed's purchases of longer-dated Treasuries represent a departure from its traditional open-market operations, the move has excited considerable comment. To the sound money camp, quantitative easing is an easy step on the way to catastrophic inflation. Another sizeable camp feel that while quantitative easing is probably benign, it may not do any good. Others, including former Fed Chair Paul Volcker, feel that while there are risks to the policy, they are the type of risks the Fed is accustomed to managing. A misleadingly-titled item on Bloomberg News quoted Mr. Volcker this way:<sup>4</sup>

"It does worry people" that "we're going to create so much money that down the road we'll create inflation," Volcker, 83, said in response to a question about the global implications of quantitative easing at an event at the National University of Singapore today. "I don't think that's beyond the capacity of the central bank to deal with in the future. But they're going to have to deal with it."

While the Fed's focus on longer-dated Treasuries is new since the financial crisis, buying Treasury securities has long been the foundation of its monetary policy operations. Generally speaking, in normal times the Fed buys T-bills when it wants to inject liquidity into the banking system and lower short-term interest rates, and sells bills when it wants to restrict the money supply and raise short-term rates. In its normal open market operations, the Fed seeks to manage the amount of cash in the banking system, targeting in particular the interest rate (the Fed Funds rate) at which banks borrow from one another to meet reserve requirements. Now, though, with short-term rates already near zero, the Fed can't exert much further influence by buying short-term T-bills. Instead, the Fed is targeting interest rates on government debt directly. The Fed presumably wants both to increase liquidity in the financial system and to hold

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<sup>3</sup> News reports pointed out that the announced "policy of reinvesting principal payments from its securities holdings" would add \$250 to \$300 billion to the total Fed purchases. See, for example, Annalyn Censky, "QE2: Fed pulls the trigger," CNNMoney, November 3, 2010, at [http://money.cnn.com/2010/11/03/news/economy/fed\\_decision/index.htm?iid=EL](http://money.cnn.com/2010/11/03/news/economy/fed_decision/index.htm?iid=EL)

<sup>4</sup> Shamim Adam and Liza Tan, "Volcker Says Quantitative Easing May Create Inflation in Future," Bloomberg News, November 2, 2010, at <http://www.bloomberg.com/news/2010-11-02/fed-s-quantitative-easing-program-may-create-inflation-surge-volcker-says.html?cmpid=digg>

down interest rates at maturities beyond one year. The policy has some novel features, and like all monetary easing it poses risks. But it is not so radical as it seems. The main uncertainty surrounding QE2 is simply whether or not it will do any good, and the principal risk is much the same as those that arise any time the Fed lowers interest rates in pursuit of monetary stimulus.

### **ARE THEY REALLY JUST CRANKING UP THE PRESSES?**

Much of the confusion surrounding quantitative easing concerns where the money for it comes from. Does the Fed really just print it? If so, is there a practical limit to how much the Fed can print? And where does it go? \$600 billion is a lot of money — couldn't the Fed find some better use for that much money than just buying US Treasury notes?

At the most basic level, the Fed will actually fund its quantitative easing policy by expanding credit — a form of printing money — which is one main purpose of the exercise. Like all banks, the Federal Reserve has the power to expand its balance sheet, creating money, by extending credit. When you borrow from your local bank — even by using your credit card — the bank advances the funds from its cash on hand, substituting one asset (your debt) for another (the cash). When you spend the money you borrow, the person to whom you pay it may deposit it into another bank. This is the step that creates new money — it increases the total deposit base against which the bank may make loans. Overall, expanding credit increases the liquidity, or money supply, in the economy. Conversely, contracting credit — and increased savings — decreases liquidity. That's why a monetary policy aimed at reducing interest rates tends to produce inflation — lower rates make saving less attractive and borrowing more so, and so credit will tend to expand, increasing the supply of money.

Under both normal operations and quantitative easing, the Federal Reserve buys US Treasury securities on the open market. It may do so with cash it has on hand from reserve deposits from member banks. More likely, though, the Fed will increase its balance sheet to buy the securities. The Treasuries the Fed receives go onto the asset side, and the Fed's main liability — currency — increases to maintain the balance. Notice what that means. The currency in your pocket is a liability of the central bank, the Federal Reserve. This isn't so odd as it sounds. Banks have long issued banknotes, which have circulated as currency. Since the Federal Reserve Act, only the Fed may do so in the US. That's why we label our currency "Federal Reserve Notes." They are literally notes on the Fed. To buy Treasury notes, the Fed issues more of these notes, printing money either literally or by increasing the electronic cash balances in the banking system.

The Fed can't just print money and spend it on goods and services, even on behalf of the Government. Federal spending is the domain of Congress, not the Fed. The Fed's policies may affect the capital flows that finance the public debt, but the Treasury does the borrowing, and Congress makes the appropriations. So while the Fed may in fact be able to call hundreds of

billions of dollars of new cash into existence, it can really only do so in the context of a financing operation — an asset has to land on the Fed's balance sheet. The Fed could not print billions of dollars and then just spend them. It has to invest them — in QE2, it buys Treasuries.

The practical limit on the Fed's ability to print money derives from its Congressional mandate to promote price stability. If the Fed adopted a monetary policy expansive enough to ignite high inflation, that would not be in keeping with its mandate. Their goal is to set a course without tipping the boat. The trouble, of course, is that we can't know in advance what the full effect of the Fed's policies will be. But we can try to assess the likely results of the current round of quantitative easing. Our best bet for that is to trace the likely money flows.

## **FOLLOW THE MONEY**

In my previous essay, I noted that the rate of private savings in the US has increased in the past couple of years, but bank credit has stagnated. In such a circumstance, an increase in the fiscal deficit (increased government borrowing) may actually have the beneficial effect of preventing a deflationary contraction in credit. To trace the capital flows that may have influenced the Fed's decision to go ahead with QE2, let's briefly review trends in the recent behavior of households, businesses, banks, and the Fed itself with a look back at the Federal Reserve's quarterly Z-1 release, Flow of Funds.<sup>5</sup> The interesting comparison is probably the change from the end of 2007, before the financial crisis began to hit hard, to the end of the third quarter of 2010, the most recent figures available.

Table B-100, "Balance Sheet of Households and Nonprofit Organizations," shows a decrease in aggregate tangible assets from \$27.9 trillion to \$23.2 trillion, and in financial assets from \$50.6 trillion to \$45.7 trillion over that period. Despite, or perhaps because of, the drop in household wealth, personal savings increased sharply, from an annual rate of \$223.7 billion at the end of 2007 to a rate of \$678.7 billion in the third quarter of 2010.<sup>6</sup> Where did those savings go? In part they went toward reducing household debt. Households' total liabilities fell from \$14.4 trillion at the end of 2007 to \$13.9 trillion in the third quarter of this year. Much of the rest seems to have gone into traditional savings vehicles like bank deposits and bonds. Specifically, households' investment in Treasury securities quadrupled from \$260 billion to \$1.08 trillion, and their holdings of time and savings deposits rose from \$5.9 trillion to \$6.3 trillion. At the same time, their holdings of money market funds fell from \$1.35 trillion to \$1.11 trillion; they nearly bailed out of US government agency debt (like Freddie Mac — down from \$670 billion to

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<sup>5</sup> You can always find the current release on the Federal Reserve's web site, at <http://www.federalreserve.gov/releases/z1/current/>. All the figures in this note are from the December 9, 2010 release. Table number references are in the text.

<sup>6</sup> For these data, I went to the St. Louis Fed's excellent FRED database. The specific data here are at <http://research.stlouisfed.org/fred2/series/PSAVE?cid=112>

just \$37 billion); and they increased holdings of municipal bonds from \$900 billion to a bit over \$1 trillion.

Since the end of 2007, the household savings rate has increased by something like \$450 billion per year, and the private savings rate overall has increased by about \$720 billion.<sup>7</sup> Households have moved around \$350 billion out of money market funds and other savings vehicles into bank deposits, and placed another \$100 billion or so in new savings into bank deposits as well. Businesses, money market funds, and the financial sector itself have added another \$325 billion or so in deposits to the banking system [Table L.205, “Time and Savings Deposits”]. So savings has both increased and migrated from other parts of the financial system, like money market funds and commercial paper, to banks, adding \$775 billion to time and savings deposits and another \$200 billion to checkable deposits.

The aggregate balance sheet of the banking sector has grown sharply in the past 30 months. Table L.109, Commercial Banking, shows an increase in bank financial assets from \$11.8 trillion at the end of 2007 to \$14.6 trillion at 3Q-2010.<sup>8</sup> The banks have tapped a number of funding sources, but the overall increase, aside from miscellaneous assets, is roughly comparable to the increase in deposits.

How have the banks used those additional deposits? It hasn’t been to make loans. Total bank credit stood at \$9.2 trillion at the end of 2007, and \$9.6 trillion in 3Q-2010, and that change is due almost entirely to increases in banks’ holdings of bonds. Their total amount of loans — mortgages, consumer credit, security credit, and other loans — is virtually unchanged at about \$6.8 trillion. A number of other categories of assets have changed, but the standout item is Reserves at the Federal Reserve, which have jumped from just \$18 billion to \$850 billion in less than three years — most of that during 2008. In essence, banks have taken about a trillion dollars in additional deposits and split them between the bond market and reserves at the Fed.

## **THE MERITS OF THE CURRENT POLICY**

With that background, we’re ready to talk about the merits of Quantitative Easing. It may seem tempting to draw a connection between the \$900 billion or so in the current quantitative easing plan (including the reinvestment of proceeds from maturities) and the \$975 billion or so in increased reserve deposits by banks, but the connection is weak if there is one at

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<sup>7</sup> See our friend FRED: <http://research.stlouisfed.org/fred2/series/GPSAVE?cid=112>

<sup>8</sup> About \$1.5 trillion of that increase comprises “Miscellaneous assets.” Of that amount, about half is in bank holding company investments in subsidiaries [think JP Morgan and Bear Stearns, or Bank of America and Merrill Lynch — Table L.229, “Identified Miscellaneous Financial Claims – Part I”]. So let’s set aside the effect of the growth of miscellaneous assets, and focus on the other \$1 trillion or so.

all. The Fed expanded its balance sheet rapidly during the crisis in 2008, but it has been reasonably steady since then. During 2008, the Fed used the rapid increase in reserve deposits to commit nearly a trillion dollars in advances to troubled financial institutions. Most of that trillion is no longer outstanding, but in 2009 and 2010 the Fed increased its holdings of federal agency and mortgage-backed securities by some \$1.2 trillion, while reserve balances have remained about steady [Table L.108, “Monetary Authority.”] In a sense, the reserves are already in use.

It looks like QE2 will expand the Fed’s balance sheet by another \$600 billion (it’s around \$2.35 trillion now).<sup>9</sup> Unless bank reserves increase further, funding for the expansion will most likely come from an increase in the Fed’s principal liability, currency in circulation. Since reserves have been about flat for nearly two years, this move looks mostly like printing money.

The Fed is not looking for some free-lunch way to fund our growing fiscal deficit by buying Treasury bonds with paper money. Rather, they are looking to stimulate economic growth by expanding credit and holding rates low, encouraging borrowing. The Fed is printing money on purpose, increasing the money supply in an effort to prevent a debilitating cycle of deflation. By buying longer-dated Treasury securities, the Fed also seeks to create a demand for those securities that will tend to raise their price, reducing their yields. In this way, the Fed can attempt to hold down interest rates at maturities far beyond the overnight lending rate they typically try to manage, and which has been close to zero for the past two years or so.

#### **THE RISKS IN QUANTITATIVE EASING**

One member of the Federal Open Market Committee, Thomas M. Hoenig, voted against the Fed’s quantitative easing plan. According to the Fed’s statement, “Mr. Hoenig believed the risks of additional securities purchases outweighed the benefits. Mr. Hoenig also was concerned that this continued high level of monetary accommodation increased the risks of future financial imbalances and, over time, would cause an increase in long-term inflation expectations that could destabilize the economy.”<sup>10</sup> Others, including me, disagree with Mr. Hoenig, holding the view that the main problem with quantitative easing is simply that it might not do any good.

To see what might limit the benefit of quantitative easing, let’s think for a moment about how investors choose Treasury securities. A detailed description of the behavior of longer-term bond markets is the subject for another note, but the most important consideration for this discussion is that bonds of longer maturities have more price risk than shorter ones. That is, the market value of longer-term bonds will generally fluctuate more than that of shorter-term bonds

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<sup>9</sup> The Fed’s balance sheet and related data are in its weekly H.4.1 Release (current is December 2, 2010) at <http://www.federalreserve.gov/releases/h41/current/h41.htm>

<sup>10</sup> FOMC November 3, 2010 announcement, *op. cit.*

during the bonds' lives. This is particularly important for investors that may need to tap the value of their holdings before the final maturity date of the bonds. If you'll need cash in a year, then buying a ten-year bond today and planning to sell it a year from now is a riskier strategy than just buying a one-year note or a 52-week T-bill. On the other hand, if you know that you'll need cash at a particular date in the future, then the longer-term note actually carries less risk, at least in nominal terms.

The graph of the yields on US Treasuries at various maturities is called the yield curve. Yields on longer-term bonds are usually higher than those on shorter-term debt, so a normal yield curve slopes upward.<sup>11</sup> One explanation for the tendency of the yield curve to slope upward is the liquidity preference hypothesis, which says that longer-dated bonds have to offer higher yields to compensate for the higher risk of locking in a yield for a longer period. The idea is that if longer-dated bonds didn't offer higher yields, then investors might as well stay at the short end of the yield curve.

The Fed wants its quantitative easing to stimulate borrowing by holding down interest rates beyond very short maturities. By keeping intermediate-term rates low, though, it might also force investors looking for decent yields to move too far out the curve (that is, to buy securities with maturities too long and risks too great). The danger is that borrowing might fail to pick up anyway, and at the same time investors might pay down debt and opt for the safety of cash, even at negligible yields. Such a condition, which economists call a liquidity trap, would frustrate the Fed's goal of increasing the money supply. If households held enough cash and banks loaned little enough, the Fed's quantitative easing might end up proving no more effective than pushing on a string (a standard economists' metaphor). Quantitative easing might then do more recycling of deposits than printing of money, and deflation could ensue in spite of the Fed's efforts.

Mr. Hoenig worries that quantitative easing could prove inflationary, and of course he could be right. The saving grace, though, is that unlike public borrowing, the Fed can easily reverse quantitative easing at a later date if it believes that tighter money has become more desirable. Simply by selling its holdings of Treasuries back into the market, the Fed could reduce its balance sheet, drain liquidity and drive interest rates at the affected maturities higher. While quantitative easing is by no means a one-way trade, we can have no assurance, however, that the Fed will assess future economic conditions accurately and reverse the policy at the right time or the right pace. The risk Mr. Hoenig identifies lies mostly in uncertainty about economic

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<sup>11</sup> Since an upward-sloping curve is more common, when short-term rates are higher than long-term rates, we say the curve is inverted. In the 1983 film comedy *Trading Places*, Jamie Lee Curtis's character says that she's saving toward an early retirement by holding US Treasury bills. That was a sensible, although extremely conservative, strategy at the time, since T-bill yields were in the teens, and the yield curve was inverted. What she couldn't have known is that she could've done even better with longer-dated Treasuries.



measurement and policy implementation — not trivial matters, but secondary, in the Federal Open Market Committee’s judgment, to the desirability of monetary stimulus.

## **CONCLUSION**

This note addresses the monetary side of the governmental efforts to stimulate the economy. The rate of private savings in the United States has continued to be fairly strong, and inflation has remained quiescent. Household savings have gone largely toward debt reduction, investments in US Treasury securities, and bank deposits. Unfortunately, the banking system has largely placed that increased deposit base in reserve balances with the Federal Reserve, rather than using it to expand credit and further the economic recovery. In that environment, the Fed’s recent policy initiative, to increase its own direct purchases of longer-dated Treasury securities, amounts to another effort by the Fed to step into an economic activity — money creation, in this case — where the private sector is falling down on the job. Whether quantitative easing will provide the desired economic boost is uncertain, but the risk that it would result in disastrous inflation seems modest — it is similar in size and character to the risk in any monetary accommodation by the Federal Reserve.

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