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Thoughts on QE2

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A LOT has been written recently, pro and con, about the Fed's new round of quantitative easing, dubbed QE2. But, frankly, much of the discussion on both sides lacks a coherent analytical framework for thinking about the key issues. I try here to provide such a framework.

The Fed, personified by its chairman, Ben Bernanke, is concerned about the weak economic recovery and, particularly, by the possibility of future deflation. To counter this tendency, the Fed plans a new round of monetary expansion. The main conclusions that I reach are:

- In the present environment, where short-term nominal interest rates are essentially zero, expansionary open-market operations involving Treasury bills would do nothing (a point with which the Fed concurs).
- Expansionary open-market operations featuring long-term Treasury bonds (QE2) might be expansionary. However, this operation is equivalent to the Treasury shortening the maturity of its outstanding debt. It is unclear why the Fed, rather than the Treasury, should be in the debt-maturity business.

The most important issue, of which the Fed is keenly aware, involves the exit strategy for avoiding inflation once the economy has improved and short-term nominal interest rates are no longer zero. The conventional exit strategy relies on contractionary open-market operations, but the worry is that this strategy would hold back an economic recovery. The Fed believes that paying higher interest rates on reserves gives it an added instrument that will help the economy recover more vigorously while avoiding inflation. I think this view is incorrect. I find that:

- In an exit strategy, raising interest rates on reserves to match rising interest rates on Treasury bills is equivalent to a contractionary open-market operation whereby the Fed cuts reserves along with its holdings of bills. Therefore, increasing interest rates on reserves is just as contractionary as the standard exit strategy.
- We can compare instead with an exit strategy whereby the Fed reduces the quantity of reserves and its holdings of long-term Treasury bonds. This operation is equivalent to the above strategy plus a lengthening of the maturity of the Treasury's outstanding debt, something the Treasury can accomplish or avoid without help from the Fed.

As a background, the Fed has, since August 2008, expanded its balance sheet by around \$1 trillion. Thus, the Fed has roughly \$1 trillion more in assets (dominated by mortgage-backed securities, but that can be the topic of a different column). On the liability side of the Fed's ledger, excess reserves that pay close to zero interest have expanded by about \$1 trillion. Institutions are willing to hold this vast amount of non-interest-bearing claims because of the weak economy; in particular, the financial crisis dramatically increased the demand for low-risk assets, such as reserves held at the Fed. Because of this rise in demand, the dramatic expansion of the quantity of "money" has not yet been inflationary.

For institutions that can hold reserves at the Fed, excess reserves are essentially equivalent to Treasury bills. Therefore, interest rates paid on these two forms of assets have to be nearly the same; in the present environment, both rates are close to zero. If the Fed carries out a conventional expansionary open-market operation, whereby it buys more bills while creating more reserves, the private sector ends up with fewer bills and correspondingly more reserves. Since institutions regard these two claims as essentially the same, there are no effects on the economy; that is, no effects on the price level, real GDP, and so on.

If the Fed does QE2, then it essentially adds to the conventional open-market operation a sale of Treasury bills and a purchase of long-term Treasury bonds. Bills and bonds are not the same, as evidenced by the difference in yields—bills are paying 0.1% while ten-year bonds are paying almost 3%. The hope is that the smaller quantity of long-term Treasury bonds outstanding (outside of the Fed) will tend to raise their price or, equivalently, lower the long-term yield. This reduction in long-term rates might spur aggregate demand. This reasoning may be correct but, as already noted, it has to be the same as the Treasury changing the maturity structure of its debt; that is, funding with more short-term and less long-term debt.

The exit strategy comes into play when and if the economy has improved and, hence, institutions no longer have an enormous demand for low-risk excess reserves that pay zero interest. If the Fed kept the interest rate on reserves at near zero and had no contractionary open-market operations, the extra \$1 trillion of reserves would become highly inflationary. To avoid the inflation, the standard policy would be contractionary open-market operations that reduce the quantity of "money".

The Fed thinks it can improve on the exit strategy by instead raising the interest rate paid on reserves. For example, if rates on Treasury bills rise to 2%, the Fed could pay around 2% on reserves to induce institutions to maintain the excess reserves of \$1 trillion held at the Fed. However, at that point, it would still be true that open-market operations involving reserves and bills would not matter. That is, the Fed's selling off \$1 trillion of Treasury bills (if it had that much) in exchange for \$1 trillion of reserves would have no effect. This reasoning implies that the exit strategy of raising the interest rate on reserves in tandem with the rise in interest rates on bills is equivalent to the standard contractionary open-market policy. That is, the effects on the real economy are the same.

In practice, the alternative to raising interest on reserves is not a massive sale of Treasury bills (which the Fed does not possess) but, rather, selling off a large portion of the assets accumulated since August 2008. After QE2, this would likely be mostly Treasury bonds but it could also be

mortgage-backed securities. When compared to selling bills, the sale of bonds has the reverse of the effect discussed before—the extra bonds would likely require a reduction in price, corresponding to a higher long-term yield and, thereby, an added contractionary force. But, again, the Treasury could offset this effect by changing the maturity structure of its outstanding debt (by shifting toward bills and away from bonds).

My conclusion is that QE2 may be a short-term expansionary force, thereby lessening concerns about deflation. However, the Treasury can produce identical effects by changing the maturity structure of its outstanding debts. The downside of QE2 is that it intensifies the problems of an exit strategy aimed at avoiding the inflationary consequences of the Fed's vast monetary expansion. The Fed is over-confident about its ability to manage the exit strategy; in particular, it is wrong to view increases in interest rates paid on reserves as a new and more effective instrument for accomplishing a painless exit.

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