

## Quantitative Easing and Tapering<sup>1</sup> In-Class Problem<sup>2</sup>

Let's assume that the Federal Reserve decides to "taper" back on its quantitative easing policy at a point where M1 is equal to \$2,723.4 billion. This is an overt attempt on the part of the Central bank to increase the money supply and decrease interest rates, or at least keep them low. They do this through open market operations and right now they're purchasing bank held assets (bonds) at the rate of \$10 billion a week. These are purchased out of the bank's own capital reserves which gives the bank cash that becomes a new deposit in the bank.

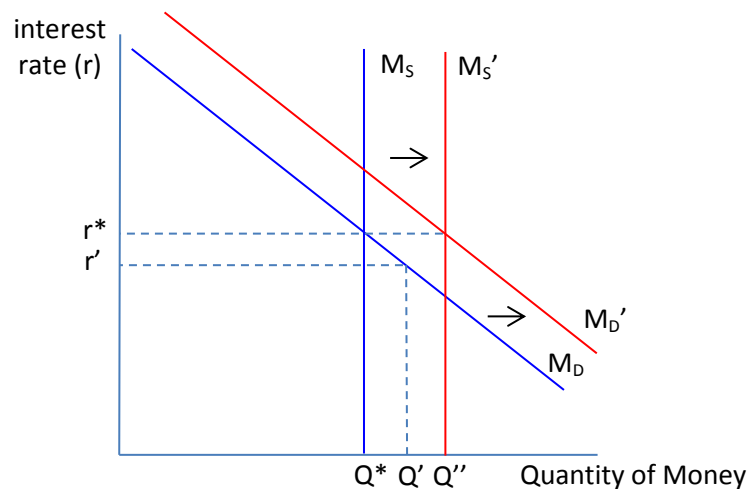
- a. **If the reserve requirement is 10%, how do the current open market operation purchases impact the money supply?**

$$\Delta MS = \Delta ID \times \frac{1}{rr}$$

$$\Delta MS = \$10 \text{ billion} \times \frac{1}{.10} = \$100 \text{ billion}$$

- b. **Why might such activity only keep interest rates low rather than overtly decrease rates? Consider this effect through a loanable funds market graph showing changes in  $M_S$  and  $M_D$ .**

Money supply shifts to the right with the Fed program, but this also causes an increase in money demanded as lower rates motivate consumer and producer purchases.



<sup>1</sup> This In-Class Problem is intended to present an abbreviated discussion of the included economic concepts and is not intended to be a full or complete representation of them or the underlying economic foundations from which they are built.

<sup>2</sup> This problem was developed by Rick Haskell (rick.haskell@utah.edu), Ph.D. Student, Department of Economics, College of Social and Behavioral Sciences, The University of Utah, Salt Lake City, Utah (2014).

- c. Assuming that the Fed cuts back to \$7.5 billion a week; what might be the effect over a six month period? Think about this in terms of the effect of this tapering of “quantitative easing” in comparison to the \$10 billion per week.

$$\Delta MS = \Delta ID \times \frac{1}{rr}$$

$$\Delta MS = \$7.5 \times \frac{1}{.10}$$

$$\Delta MS = \$7.5 \times 10$$

$$\Delta MS = \$75 \text{ billion per week}$$

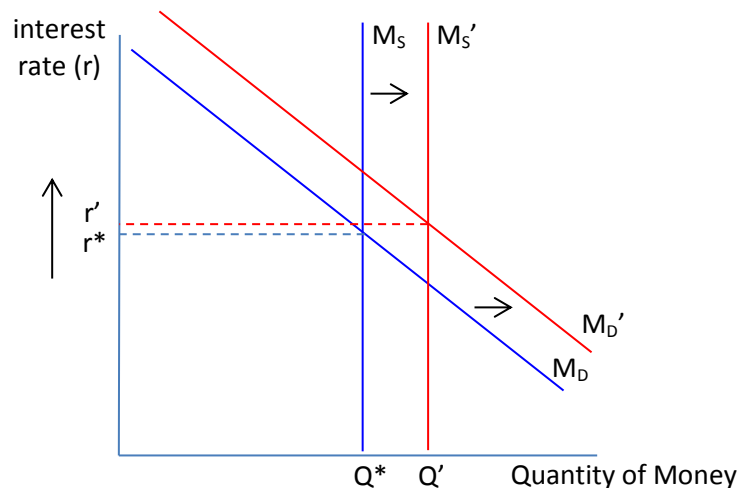
$$\Delta MS \text{ over 26 weeks (6 months)} = \$75 * 26 = \$1,950 \text{ billion}$$

In order to appreciate what’s taking place here we need to think about the rate at which the Fed has been increasing the money supply with the quantitative easing programs and what the rate of change is as the Fed starts to taper.

Based on the same types of calculations as those above we know that the \$10 billion weekly easing policy has been expanding the money supply by \$100 billion each week, so tapering to \$75 billion isn’t a contraction of the money supply will still allow the money supply to increase, but at a decreasing rate. So the loanable funds market will still experience an increase in supply.

- d. Would you expect this change to allow rates to remain constant, increase or decrease?

Since the market is already used to increases of \$100 billion per week, and both consumer and producer demand is already based on this expectation, we might expect money demand to continue at a strong pace, while the change in money supply is limited to \$75 billion. This would result in increases in interest rates.



**e. With real interest rates already at or near 0% how does any form of quantitative easing policy assist the economy?**

It most likely would only keep rates low rather than meaningfully decrease them further. At real interest rates of near 0% rates can't really drop much, but they would have a natural inclination to rise. If the Fed wants to keep rates low, they have to thwart that natural inclination and additional increases in the money supply might be one of the ways of doing this.

So... in effect, the quantitative easing policies, even if some form of tapering is applied, aren't intended to further decrease interest rates, but to try to keep them low in the face of increased money demand as businesses and the economy improve generally.

***But there's another issue at hand here.*** It's not simply an increase in the money supply, but also an improvement of the capital reserves of the bank. In this case the Fed is buying mortgage backed securities issued by Federal agencies (FHA, GNMA, FHRA) that represent troubled assets for the banks and have been subject to mark downs, but they're being purchased at "face value" rather than the marked down value, so this also provides a significant stabilizing effect for the bank.