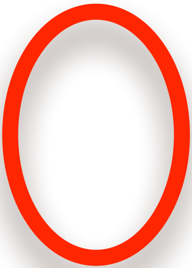
Banks then create additional money by lending these new reserves several times


Money
Multiplier



When the Fed buys bonds (QE) it creates money by adding bank reserves

When the Fed buys 10b in bonds, it injects 10b of new money: $\Delta R = 10b$

$$r = 10\%$$

When the Fed buys 10b in bonds, Banks create 90b in new loans

$$\Delta L = \Delta D - \Delta R$$

$$\Delta D = \Delta R \times \frac{1}{r}$$

$$\Delta D = 10 \times \frac{1}{0.1}$$

$$\Delta D = 10 \times 10 = 100$$

$$\Delta L = 100 - 10 = 90$$

$$\Delta M^s = \Delta \text{Currency} + \Delta \text{Deposits}$$

$$\Delta M^{s} = 0 + 100 = 100$$

When the Fed buys bonds, the Money Supply increase by 100b

When the Fed buys 10b in bonds, Deposits increase by 100b

The Fed
created
10b

Banks create an additional 90b

Purchasing bonds from the public or from banks has the same effect except banks are paid more for the bonds than what they would get if they sold their bonds in the Open Market

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Assets	Liabilities
 Assume the Fed is presently holding 100b in Bonds	**Bank Reserves** $R_A = 0.1 \times 250 = 25b$ $R_B = 0.1 \times 100 = 10b$ $R_C = 0.1 \times 150 = 15b$ $R_D = 0.1 \times 300 = 30b$ $R_E = 0.1 \times 200 = 20b$ Total Reserves = 100b