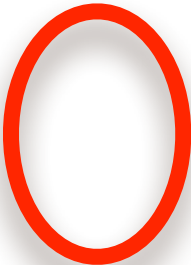Banks now have less than required reserves. As loans are paid back, instead of issuing new loans banks put the money paid into reserves: This means that the amount of loans outstanding decrease

Money
Multiplier

When the Fed sells bonds (QT) it disappears money by reducing bank reserves

When the Fed sells 20b in bonds, it disappears 20b in reserves:

$$\Delta R = -20b$$

r = 10%

When the Fed sells 20b in bonds, Banks reduce loans by 180

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

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

$$\Delta D = -20 \times \frac{1}{0.1}$$

$$\Delta D = -20 \times 10 = -200$$

$$\Delta L = -200 - (-20) = -180$$

$$\Delta M^s = \Delta Currency + \Delta Deposits$$

$$\Delta M^s = 0 + (-200) = -200$$

When the Fed sells 20b in bonds, the Money Supply decrease by 200b

When the Fed sells 20b in bonds, Deposits decrease by 200b

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The Fed destroyed 20b

$$\Delta D = \Delta R \times \left(\frac{1}{r}\right)$$

Money Multiplier

$$r = 10\%$$

$$\Delta D = -20 \times \frac{1}{0.1}$$

Banks destroyed an additional 180b

$$\Delta D = -20 \times 10 = -200$$ When the Fed sells 20b in bonds, Deposits decrease by 200b

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

$$\Delta L = -200 - (-20) = -180$$ When the Fed sells 20b in bonds, Banks reduce loans by 180

$$\Delta M^s = \Delta Currency + \Delta Deposits$$

$$\Delta M^s = 0 + (-200) = -200$$ When the Fed sells 20b in bonds, the Money Supply decrease by 200b

Example: The following values are
given