





D = 1,200

Currency = 1,0000b

$r \equiv 20\%$

$R=0.2*1,200$

L = %60

Calculate the amount of money the Fed needs to **disappear** in order to cause a 500b **decrease** in the Money Supply.

$$\Delta D = \Delta R \times (1/r)$$

$$M^s = 1,000 + 1,200$$

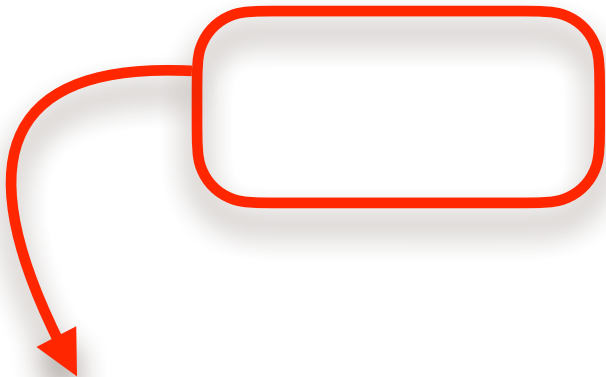
$$M^s = 2,200$$

$R = r \times D$

L = D - R

$$R \equiv 240$$

$L = 1,200 - 240$





The Fed needs to
disappear 100b in reserves
in order to cause a \$500b
decrease in Deposits and
in the Money Supply

$$-500 = \Delta R \times (1/0.2)$$

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

$$-500b = \Delta \text{Currency} + \Delta D$$

Assume: No change in currency

-500b = ΔD

$$-500 = \Delta R \times (5)$$

$$-500/5 \equiv \Delta R$$

-1000b ≡ ΔR

The Fed needs to **sell** 100b in **bonds** in order to cause a \$500b **decrease** in Deposits and in the Money Supply

Calculate the amount of money the Fed needs to **disappear** in order to cause a **500b decrease** in the Money Supply.

$$\text{Currency} = 1,000b$$

$$r=20\%$$

$$R = r \times D$$

$$R = 0.2 \times 1,200$$

$$R = 240$$

$$L = D - R$$

$$L = 1,200 - 240$$

$$L = 960$$

$$M^s = 1,000 + 1,200$$

$$M^s = 2,200$$

$$D = 1,200$$

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

$$-500b = \Delta \text{Currency} + \Delta D$$

Assume: No change in currency

$$-500b = \Delta D$$

$$\Delta D = \Delta R \times (1/r)$$

$$-500 = \Delta R \times (1/0.2)$$

$$-500 = \Delta R \times (5)$$

$$-500 / 5 = \Delta R$$

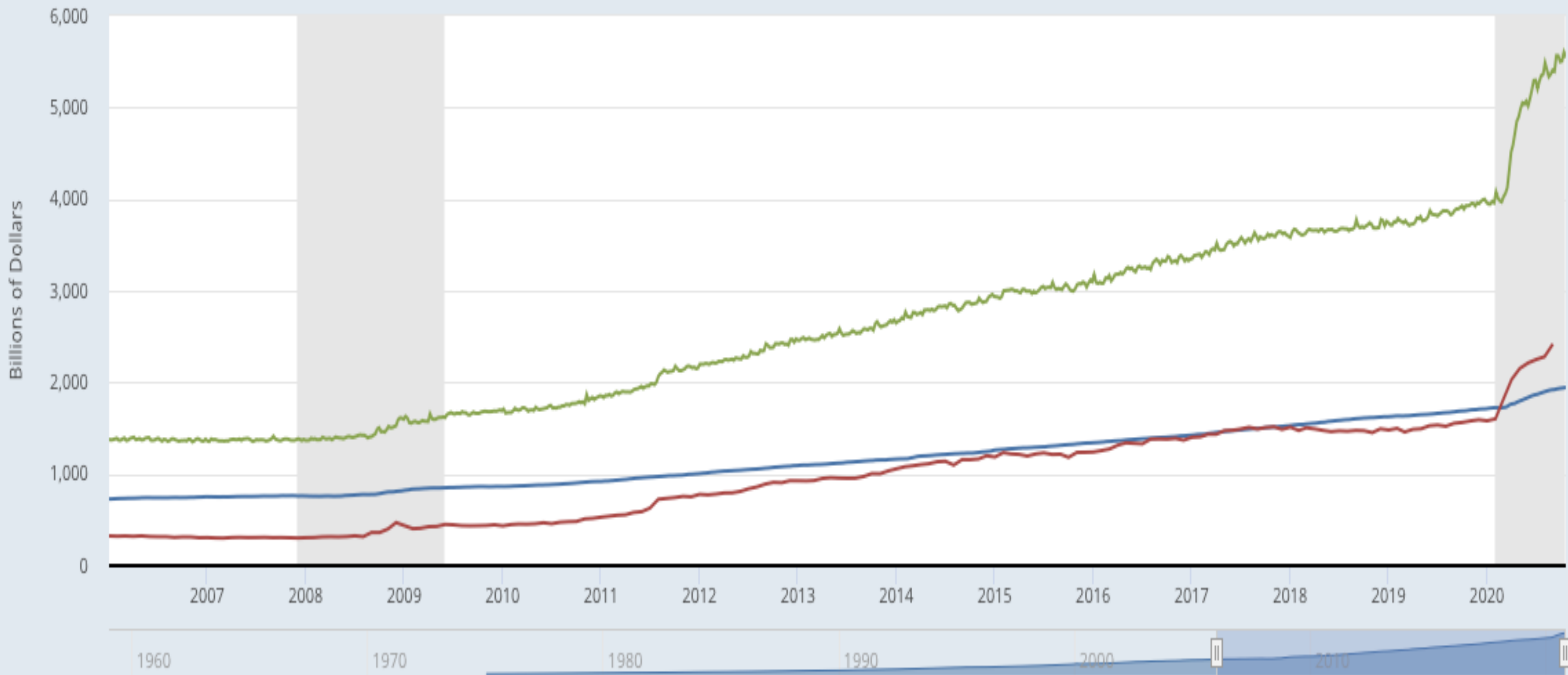
$$-100b = \Delta R$$

The Fed needs to **sell** 100b in **bonds** in order to cause a \$500b **decrease** in Deposits and in the Money Supply



- Currency Component of M1
- Demand Deposits: Total
- M1 Money Stock

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



Shading indicates U.S. recessions; the most recent one is ongoing.

Source: Board of Governors of the Federal Reserve System (US)

fred.stlouisfed.org

