Money Can be Created

- The government can create money
  - Usually done through the central bank
  - The Federal Reserve System

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  - Usually done through the central bank
  - The Federal Reserve System
  - The Bank of England
  - The Bank of Japan
  - The European Central Bank

Money Can be Created

- The government can create money
  - Commercial Banks can Create Money

How Money is Created

- Suppose the Federal Reserve System purchases a $200 bond from Fred.
  - If I bought a bond, I would have to pay for it with money I already had.
  - Not the Fed. It can print money.
How Money is Created (2)

• Lets suppose the Fed hands Fred $200, in the form of 10 $20 bills, fresh off the presses.
• $M_0$, $M_1$, and $M_2$ have all gone up by $200

How Money is Created (3)

• Lets suppose the Fed hands Fred $200, in the form of 10 $20 bills, fresh off the presses.
• $M_0$, $M_1$, and $M_2$ have all gone up by $200
• Suppose Fred decides to keep $100 in cash and put $100 in his account at (say) Key Bank.
  – $M_0$, $M_1$, and $M_2$ have still gone up by $200
  – $100 in Fred’s Pocket
  – $100 in Fred’s Account at Key Bank

How Key Bank Creates Money

• Key Bank will probably lend some of that money out. It might keep one $20 bill as a reserve and lend four to Sam.
• $M_1$ and $M_2$ have gone up by $280
  – $100 in Fred’s Pocket
  – $100 in Fred’s Checking Account
  – $80 in Sam’s Pocket

Key Bank has increased the money supply.

How Huntington Bank Creates Money

• Sam decides to deposit the entire $80 in his account at Huntington Bank. Huntington keeps one $20 as a reserve, and lends the other three out to Janet.
• $M_1$ and $M_2$ are now up by $340
  – $100 in Fred’s Pocket
  – $100 in Fred’s Checking Account
  – $80 in Sam’s Pocket
  – $60 in Janet’s Pocket
Making Money

How Key Bank Creates More Money
• Suppose Janet takes her $60 back to Key for deposit in her account. Key can lend most of this out to Betty and create even more money.
• If Betty takes her money to another bank the process goes on.

When does it end?
• How much money will be created depends on the money multiplier. Those depend on
  – The fraction of money people want to keep in currency
  – How big a reserve banks maintain.

Making Money

In 2003,
\[
M_1 \text{Multiplier} \approx 2 \\
M_2 \text{Multiplier} \approx 8
\]
These multipliers mean the $200 bond purchase will lead to a $400 increase in \( M_1 \) and a $1,600 increase in \( M_2 \).

Making Money

Bank Reserve Requirements
• A liquidity reserve against depositor reserves.
• To meet the minimum required reserve ratio, set by the Federal Reserve System. (Sometimes referred to as required reserves.)

Making Money

Evading Reserve Requirements

Making Money

Evading Reserve Requirements
Fred’s Checking Account (20% required reserves).
Fred’s Money Market Account (0% required reserves).

Making Money

Evading Reserve Requirements
Fred’s Checking Account (20% required reserves).
Fred’s Money Market Account (0% required reserves).
Making Money
Evading Reserve Requirements
Fred Deposits $200.
Fred’s Checking Account (20% required reserves).
Fred’s Money Market Account (0% required reserves).
Bank Automatically Transfers $200
Fred Withdraws $200.
Fred’s Checking Account (20% required reserves).
Fred’s Money Market Account (0% required reserves).
Bank Automatically Transfers $200

Making Money
Liquidity Reserves
• Banks still maintain reserves. They never know for sure how much depositors will want to withdraw.
• The point is they are set by a business judgment, not by government fiat.

Making Money
What Causes Money Multipliers to Change
• The public becomes concerned that they will not be able to withdraw their deposits on demand from their banks.
• Banks become more concerned that they are not keeping enough reserves to meet their depositor's demands.
In 1929-33 these effects were a major cause of the Great Depression.

A Postscript

• We talk about Fred selling a $200 bond to the Federal Reserve System
• Don’t Try It

Government actually buys and sells through a small group of bond dealers in NYC.