Money Market II: Money Demand and Money Market Equilibrium

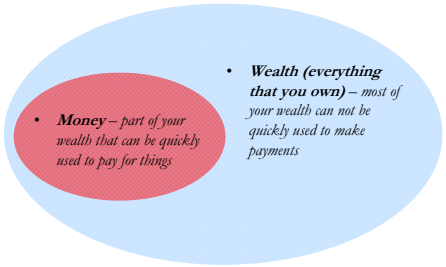
Chapter 12 (p. 313-325)

Money Demand

Money Demand

- Individual demand for money
  - Amount of wealth intended to be held as money, rather than other assets
- Key cost and benefit analysis behind the demand for money
  - Money useful as means of payment
  - Costly to hold because of the lost interest that other assets pay (bonds, stocks…)

Wealth and Money



Modeling Money Demand

- Simplification: Households and businesses divide their wealth between just two assets
  - Money (liquid asset)
    - Useful as means of payment, but earns no interest
  - Bonds (illiquid asset)
    - Earns interest but is not useful as means of payment
  - Wealth = bond holdings + money holdings

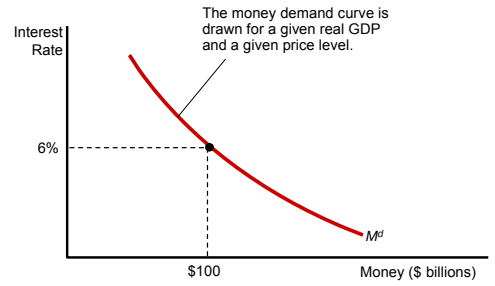
Properties of Individual Money Demand

- Cost and benefit analysis implies:
  - Demand for money (liquidity) increasing in
    - Price level
    - Real income
  - Demand for money decreasing in
    - Nominal interest rate (opportunity cost of holding money)

Properties of Aggregate Money Demand

- Aggregate money demand: Sum of money demand of all individuals in the economy
- Inherits properties of individual money demand, and thus
  - Increasing in real GDP
  - Increasing in aggregate price level
  - Decreasing in market nominal interest rate

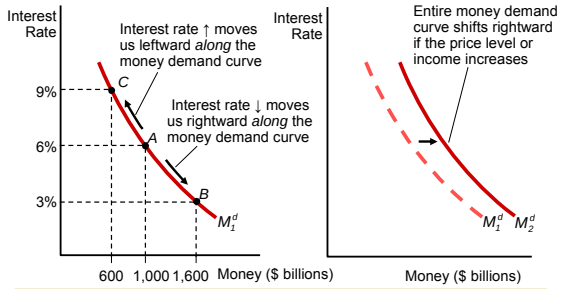
Aggregate Money Demand Curve



Aggregate Money Demand Curve

- Money demand curve: Total quantity of money demand for each level of nominal interest rate
  - Movement along the money demand curve
    - A change in the nominal interest rate
  - Shift in the money demand curve
    - A change in real income (real GDP) or price level

Shifts vs. Movements Along the M^d Curve

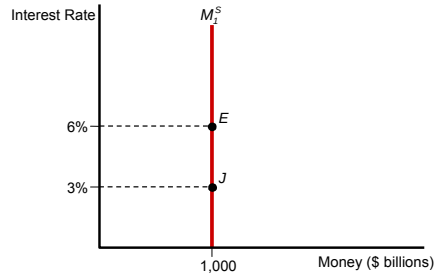


Money Market Equilibrium

Defining Money Supply Curve

- Money supply curve: Total quantity of money in the economy for each level of the interest rate
  - Chosen by Fed by choosing monetary base
    - Money supply = deposit multiplier x monetary base

Money Supply Curve



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Shifts in Money Supply Curve

- Rightward shift (monetary expansion)
  - Open market purchases of bonds by the Fed resulting in injection of reserves into the banking system
- Leftward shift (monetary contraction)
  - Open market sales of bonds by the Fed resulting in withdrawal of reserves from the banking system

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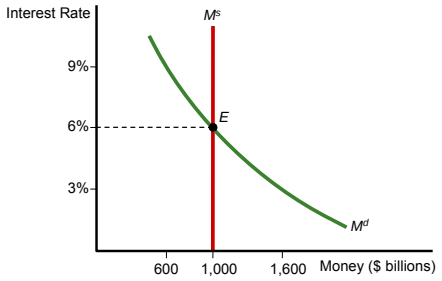
Money Market Equilibrium



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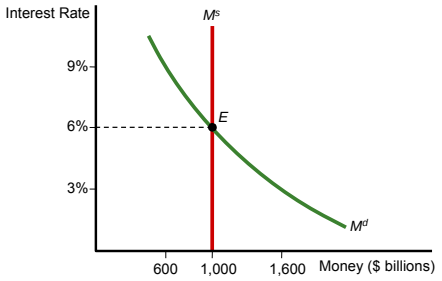
Why Point E is an Equilibrium?



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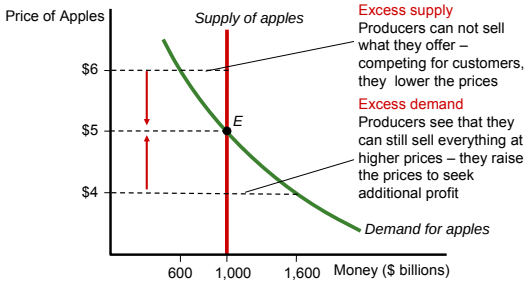
Think: Does Standard Logic Apply?



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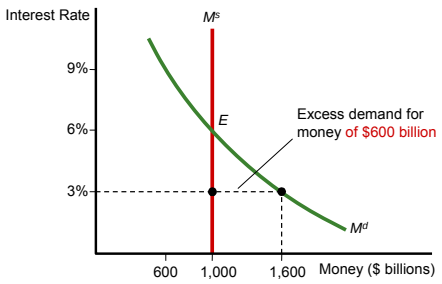
Think: What if Interest Rate Too Low?



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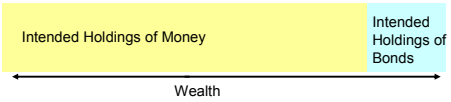
Link Money Market to Market for Bonds

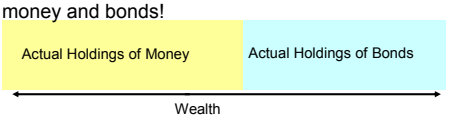
The public divides its wealth into money and bonds

Money demand tells us how they want to divide it



Money supply tells us how it is actually divided

After all, the public must hold all the outstanding money and bonds!



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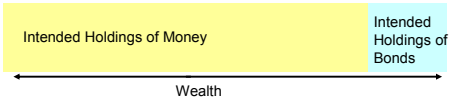

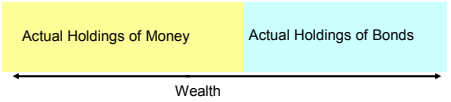

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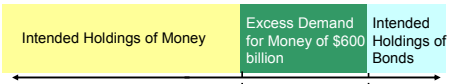

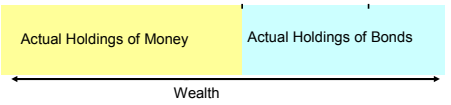

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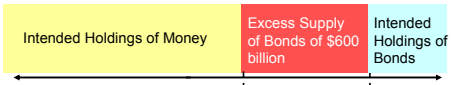
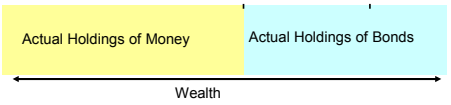




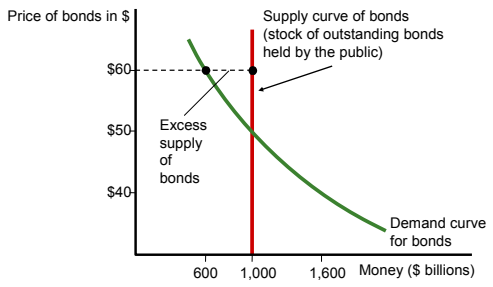
Market for Bonds is Like Market for Apples

- Excess demand for money = excess supply of bonds
- Standard logic applies
  - Sellers of bonds compete for customers, and lower bond prices
  - Lower bond prices = higher return on bonds (yield) = higher market interest rate!

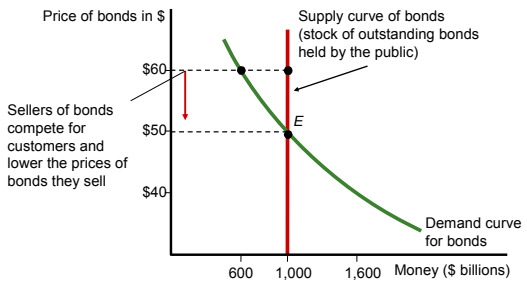
Why?

- When price of a bond falls, interest rate (return) on the bond goes up, and all the way around
- Example: Consider a bond that promises to pay $110 in one year from now
  - Suppose the price of this bond is $110 today:
    - Then, yield is (110-110)/110*100%=0%
  - Suppose the price of this bond is $100 today:
    - Then, yield is: (110-100)/100*100%=10%

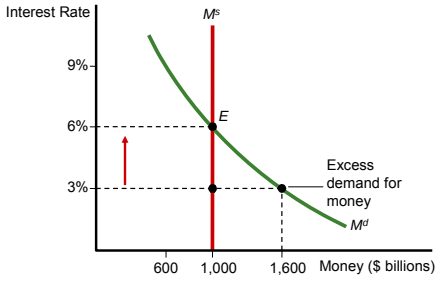
Standard Logic Applies to Market for Bonds



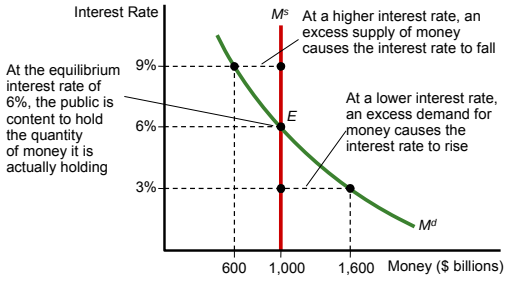
Standard Logic Applies to Market for Bonds



Implications for Money Market



Summary: Money Market Equilibrium



Irrelevance of the Choice of Monetary Policy Instrument

Choice of Monetary Policy Instrument

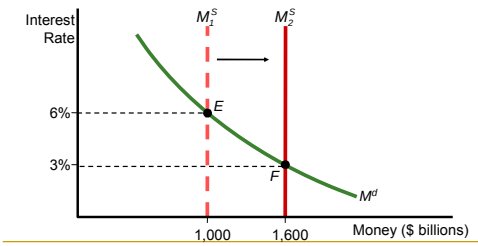
- Due to practical considerations, FED finds it more convenient to announce the interest rate target rather than money supply target
- It is the same thing in our model!

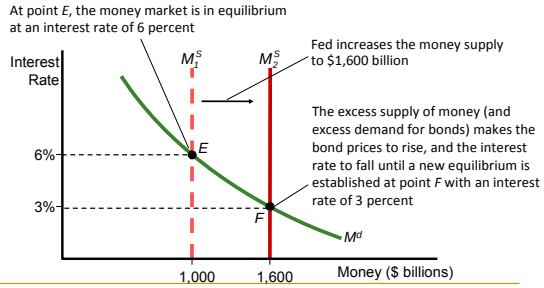
Why?

- When Fed chooses money supply, it effectively chooses the interest rate, and all the way around
  - Example: Suppose Fed announces a fall in interest rate target from 6% to 3%
    - To do it, the FED anyway needs to increase money supply by $600 billion
    - Could well just announce the latter, and the effect would be the same!

Why?

- To lower interest rate from 6% to 3% FED needs to increase money supply by $600 billion – could well just announce the latter



Why?

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