# Econ 3102: Intermediate Macroeconomics

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July 17, 2008

# Announcements

- PS4 Posted and Due July 21
- Reading Report 2 will be posted and Due July 23

# Markets

- Graph Labor Market
  - Demand for Labor ($MP_n$)
  - Supply for Labor $MRS_{l1,l2} = \frac{w_1(1+r)}{w_2}$
- Graph Aggregate Market
  - Aggregate Demand $\frac{\Delta Y_1^d}{\Delta r} = \frac{1}{1-MPC}\left(\frac{\Delta C}{\Delta r} + \frac{\Delta I}{\Delta r}\right) < 0$
  - Aggregate Supply $z_1 F(K_1, N_1^s)$

# Money

- Role in the Economy
  1. Medium of Exchange
  2. Store of Value
  3. Unit of Account
- Effect in Economy? Neutral?
- Money Market
  - Supply
  - Demand
- Measures of Money?
  - M1 = Currency, Checking Deposits, etc.
  - M2 = M1 + Savings, etc.

# Money Supply ($M^s$)

- Government Controls All
- What does this look like?
- Graph Money Market with Supply

# Money Demand ($M^d$)

- Transactions
- Optimal Decisions for Consumer and Firm
- No Utility
- No Interest
- Why hold?
- Economic Requirement

# Interest Rates

- Nominal Interest Rate (R)
  - Rate of Return on Bond in Units of Money
  - Bond Pays (1+R) Money Next Period
- Real Interest Rate (r)
  - Rate of Return on Bond in Units of Goods
  - Bond Pays (1+r) Apples Next Period

# R vs. r

- Nominal Interest (R) in Real Terms (r)
  - Give Up $\frac{1}{P_1}$
  - Receive $\frac{1+R}{P_2}$
- $1 + r = \frac{\frac{1+R}{P_2}}{\frac{1}{P_1}}$
- $1 + r = \frac{1+R}{\frac{P_2}{P_1}}$
- Inflation Rate
  - $i = \frac{P_2 - P_1}{P_1}$
  - $1 + i = \frac{P_2}{P_1}$
- $1 + r = \frac{1+R}{1+i}$

# R vs. r

- $1 + r = \frac{1+R}{1+i}$
- $r = R - i - ir$
- $r \approx R - i$
  - i=0.1
  - r=0.08
  - ir=0.008

Note: $1 + r^m = \frac{1+0}{1+i}$

$\Rightarrow 1 + r^m = \frac{1}{1+i}$

# Money Demand ($M^d$)

- $\frac{\partial M^d}{\partial P_1} > 0$
  - 10 Apples at \$1 vs. \$2
- $\frac{\partial M^d}{\partial Y_1^d} > 0$
- $\frac{\partial M^d}{\partial R} < 0$
  - Higher Return $\Rightarrow$ Save More
- Graph Money Demand $M^d(Y_1^d, r)$
- "Shifts" (Pivots)