The Capital Market (Wall Street)
Savings and Investment

Household's Receive Income, Consume, and Save: Buy Debt and Equity

• Firms Borrow: Issue Debt and Equity
• Governments borrow: Issue Debt

Capital Market (Wall St.): Determines rates of return
Supply of savings = Demand for savings
(investment in new capital)
The Capital Market

• Capital market clearing condition
  \[ S = I \]

• Aggregate savings is the sum of Private Savings and government savings
  – Govt. Savings are Taxes Revenue-Govt. expenditure
  \[ S_p + S_g = I \]

Determinants of National Saving

- An increase in expected real interest rate causes desired national saving to rise, see Fig. 1.
- An increase in \( G \) financed through increased government debt, causes desired aggregate savings to fall, Fig. 2.
- An increase in \( Y \) causes desired national saving to rise. Part of the extra income is saved to provide for future consumption, Fig. 3.
Demand for Investment

- Investment this year is capital available next year

$$K_{t+1} = K_t * (1-d) + I_t$$

- $K_t$ is the capital stock
- $I_t$ the investment, and
- $K_{t+1}$ is capital stock at the beginning of $t+1$

Example:
- $K_t = $100
- Depreciation rate = 5% (d = 0.05)
- $I_t = $7
- $K_{t+1} = $102

Demand for Capital

Marginal Product of Capital (i.e., MPK) is diminishing in $K$

Marginal Product of Capital

Marginal Product of Capital (MPK) is diminishing in $K$.
Demand for Capital

- Suppose all firms can borrow at the real interest rate $r$

- The no-arbitrage condition
  
  $$ r = MPK_{t+1} - d $$

  determines the desired capital stock

Determinants of Investment Schedule

- Firms invest to the point
  
  $$ r = MPK^f(K_{t+1}) - d $$

- The $MPK^f$ refers to the future MPK (the future return to capital)
Demand for Capital and Investment

Desired Capital Stock $K_{t+1}$ determines investment demand

$$K_{t+1} = K_t(1 - d) + I_t$$

Drop in future TFP

A drop in future TFP reduces MPK and hence the Investment curve drops
Capital Market Equilibrium in a Closed Economy

A Decline in Savings

A fall in Savings can raise the interest rate and lower investment
An Increase in G affects Investment

- In a closed economy an increase in G lowers aggregate savings
- The real interest rate increases
- The level of investment falls
- Increased G lowers I
  "crowding out" effect

Crowding Out Effect
An Increase in future TFP

Expectations of better growth prospects for the future increase investment today

Investment determined by (i) real interest rate (ii) future prospects

Key Message

Education, Openness, Property Rights Protection

TFP growth

Greater wealth is created

Investment boom, Real GDP growth and Rise in per-capita Income