**Investment**

- “Investment” is the thing that really makes our economy go and grow!
- Investment is any **NEW**
  - Plant and equipment
- Investment is any **NEW**
  - Additional inventory
- Investment is any **NEW**
  - Residential housing

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**Inventory Investment**

Includes only net change

<table>
<thead>
<tr>
<th>Date</th>
<th>Level of Inventory</th>
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<tr>
<td>Jan. 1, 2003</td>
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Started the year with $120 million
Ended the year with 130 million
The net change is a (+) 10 million

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**Inventory Investment (Continued)**

Includes only net change

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Started the year with $130 million
 Ended the year with $120 million
The net change is a (-) 10 million

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**Inventory Investment, 1960-2000 (in billions of 1987 dollars)**

This is the most volatile sector of investment. Note that investment was actually negative during three recessions
**Investment in Plant and Equipment**

- Investment in *plant and equipment* is more stable than inventory
  - Even in bad years companies will still invest a substantial amount in new plant and equipment
  - This is mainly because old and obsolete factories, office buildings, and machinery must be replaced
    - This is the depreciation part of investment

**Residential Construction**

- Involves replacing old housing as well as adding to it
- Fluctuates considerably from year to year
- Has mortgage interest rates play a dominant role

**Investment**

- Investment is the most volatile sector in our economy
  - GDP = C + I + G + Xn
- Fluctuations in GDP are largely fluctuations in investment

**Investment (Continued)**

- Recessions are touched off by declines in investment
- Recoveries are brought about by rising investment

**How Do Savings Get Invested?**

- Money saved is put into stocks and bonds
- Banks loan money based on their demand deposits and reserve requirements
- Businesses take this money and buy new plant and equipment, and add to their inventory
- Corporations also use “retained earnings” and “depreciation allowances”

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There has been a strong upward trend in this investment sector over the last four decades. Note the periodic downturns, especially during recession years.
**Gross Investment vs Net Investment**

- In the equation:
  \[ \text{GDP} = C + I + G + X_n \]
  - **The “I” represent gross investment**

**Gross investment - depreciation = net investment**
- Depreciation is taking into account for the fact that plant & equipment wear out and houses deteriorate

**Calculate Gross Investment and Net Investment**

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- **Expenditures on new plant & equipment** $120 billion
- **Expenditures on new residential housing** $90 billion
- **Depreciation on plant & equipment and residential housing** $30 billion

**Solution**

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- **inventory investment** $10
- **new P & E** 120
- **new RH** 90
- **gross investment** 220
- **net investment** $190

**Building Capital**

- Investment involves sacrifice (on someone’s part)
- To invest
  - We must work more
  - We must consume less (save)

**Determinants of the Level of Investment**

- **Sales outlook**
- **Capacity utilization rate**
- **Interest rate**
- **Expected rate of profit (ERP)**
The Sales Outlook

- You won't invest if the sales outlook is bad
  - If sales are expected to be strong the next few months the business is probably willing to add inventory
  - If sales outlook is good for the next few years, firms will probably purchase new plant and equipment

Capacity Utilization Rate

- This is the percent of plant and equipment that is actually being used at any given time
- You won't invest if you have a lot of unused capacity
  - During recessions, why build more when you are not using all of what you have
- Other factors
  - Manufacturing is a shrinking part of U.S. economy due to imports and increasing investment overseas by U.S. Companies

Capacity Utilization Rate in Manufacturing, 1965-2000

Since the mid-1980s, our capacity utilization rate has been in the low 80s. Note that it fell during each recession

The Interest Rate

- You won't invest if interest rates are too high

Interest rate = \( \frac{\text{The interest paid}}{\text{The amount borrowed}} \)

Assume you borrow $1000 for one year @ 12 %, how much interest do you pay?

\[
0.12 = \frac{X}{1000} \\
X = 120
\]

The Interest Rate

Assume you borrowed $1000 for one year and paid $120 interest. What was the interest rate?

\[
X = \frac{120}{1000} \\
X = 0.12 = 12 \%
\]

Expected Rate of Profit (ERP)

\[
\text{Expected Profits} = \frac{\text{Expected Profits}}{\text{Money Invested}}
\]

How much is the ERP on a $10,000 investment if you expect to make a profit of $1,650?
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\[
\text{ERP} = \frac{\text{Expected Profits}}{\text{Money Invested}} = \frac{1,650}{10,000} = 0.165 = 16.5\% 
\]

You Won’t Invest If Interest Rates Are Too High

- In general, the lower the interest rate, the more business firms will borrow.
- To know how much they will borrow and whether they will borrow, you need to compare the interest rate with the expected rate of profit.
- Even if they are investing their own money, they need to make this comparison.

Why Do Firms Invest?

- Firms will only invest if the expected profit rate is “high enough”.
- Firms invest when
  - Their sales outlook is good
  - Their capacity utilization rate is high
  - Their expected profit rate is high
- Even if firms’ invest their own money, the interest rate is still a consideration.

What Accounts for our Low Rate of Investment?

- The short time horizon of corporate America
- The quality of management in America
- The quality of labor in America
- The low savings rate in America
  - The less we save, the less we can invest
  - The less we invest, the slower our rate of economic growth