# Macroeconomic Indicators
# Lecture Notes

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January 19, 2014

# National Income

- National Income is typically measured by measuring the economy's output
- The most common output measure is **Gross Domestic Product (GDP)**
- GDP can be measured using Nominal (Current Prices) or Real (Constant Prices) quantities
- We focus on Real GDP - more details in Chapter 20

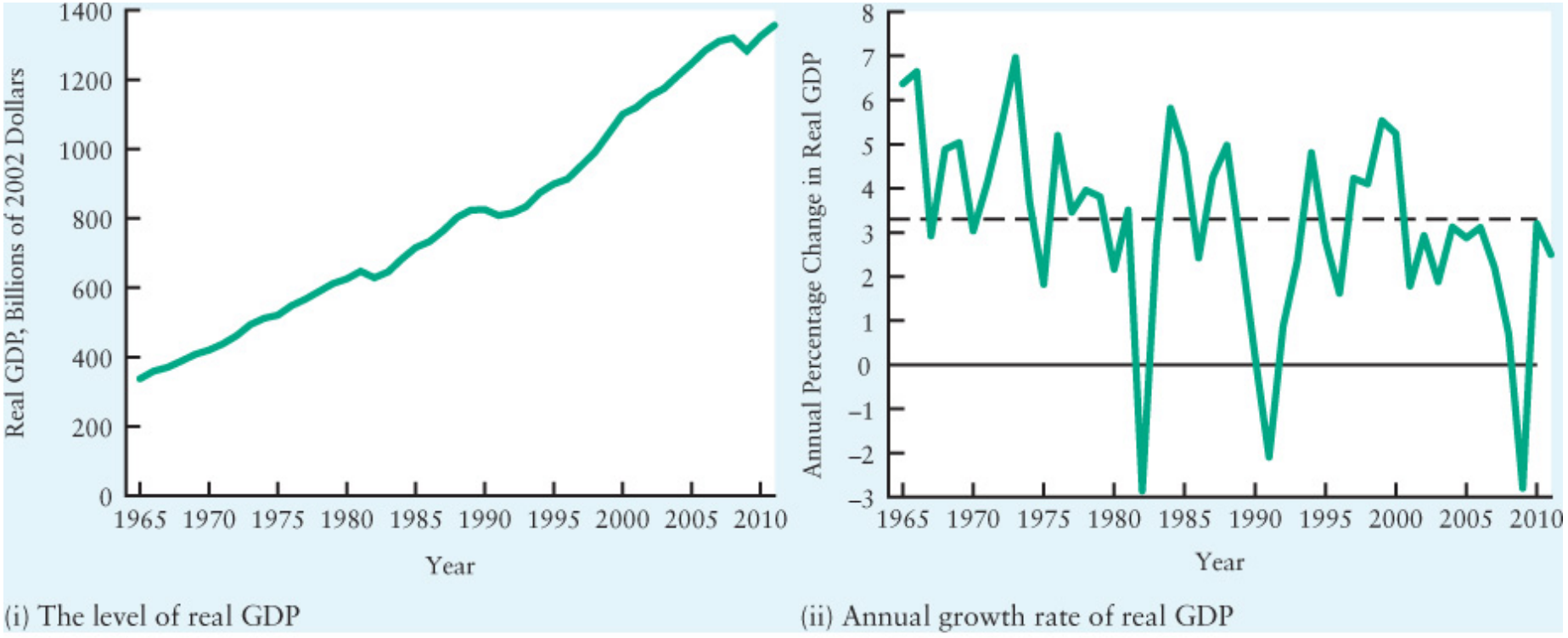





Figure : Real GDP

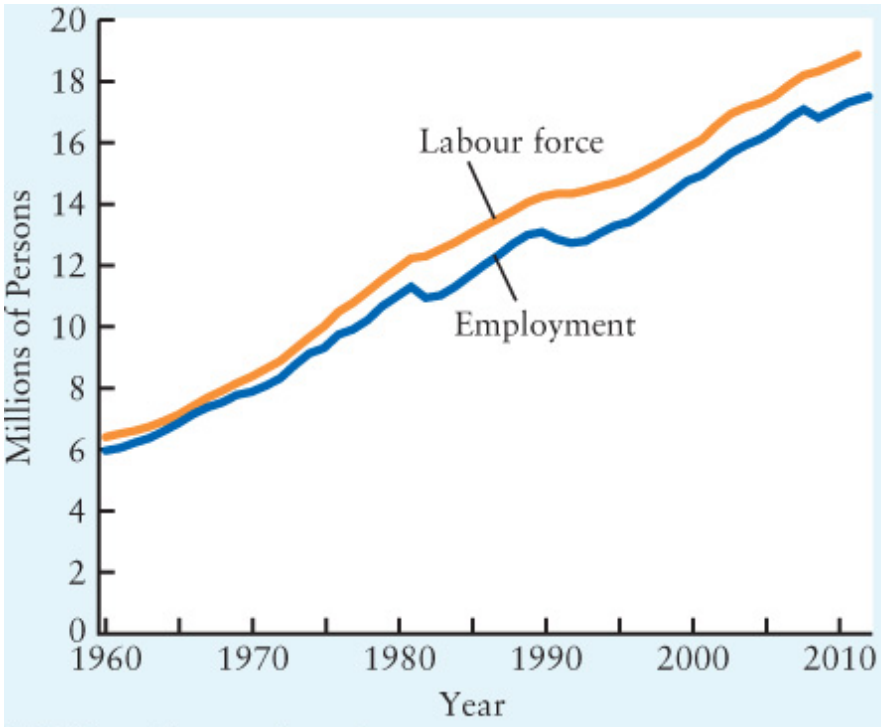
Stylized facts regarding Real GDP

- Real GDP is increasing (on average) over time - Economic Growth
  - Average Quarterly Growth Rate $\approx 0.83\%$
  - Implies an Annual Average Growth Rate $\approx 3.4\%$
- **However** ... Real GDP is constantly fluctuating around its upward trend - Business Cycles
- A *recession* occurs when Real GDP growth is below the average growth rate

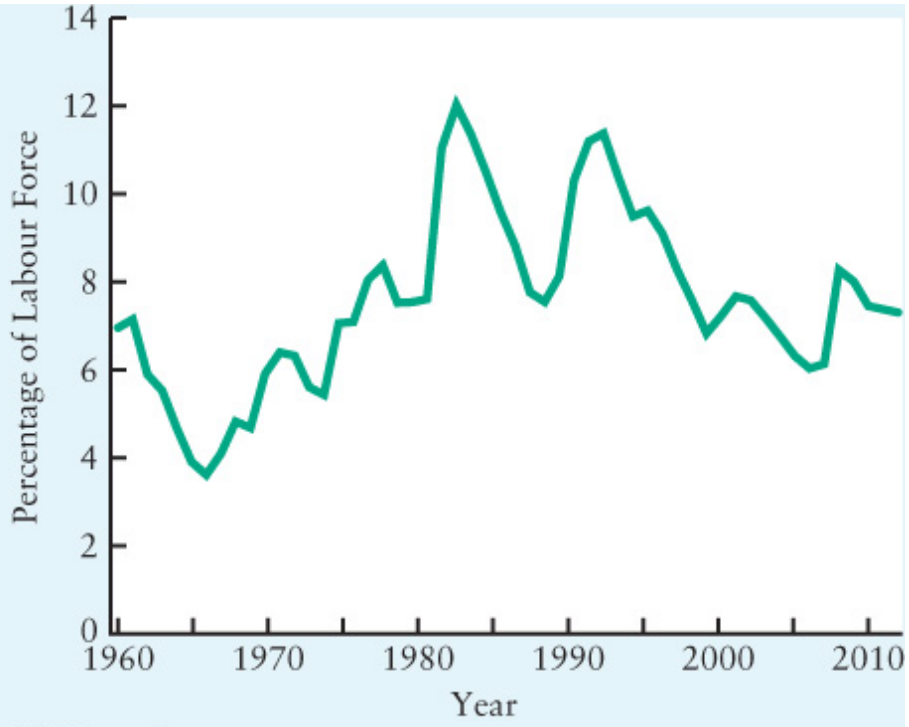
# Employment, Unemployment, and the Labour Force

Definitions:

- Employment: The number of people (15 years of age or older) who have jobs
- Unemployment: The number of persons (15 years of age or older) who are not employed *and* are actively searching for a job
- Labour Force: The number of persons employed plus the number of persons who are unemployed
- Unemployment Rate: Unemployment expressed as a percentage of the labour force



(i) Labour force and employment



(ii) Unemployment rate



Figure : Labour Force and Employment

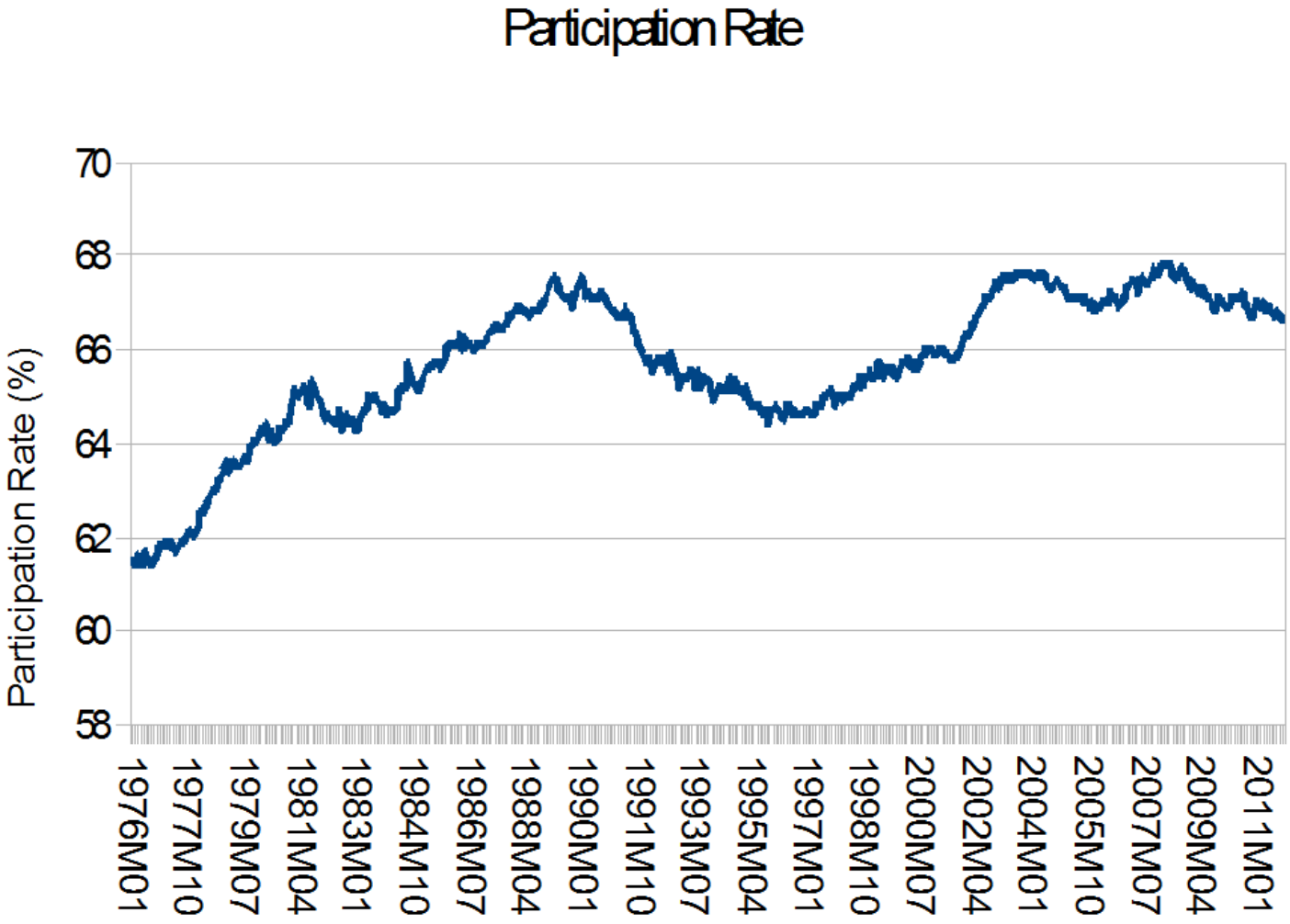



Figure : Participation Rate

What do we learn from the Participation Rate?

- Discouraged Worker: A person (15 years of age or older) who is not actively seeking employment or who does not find employment after long-term unemployment - "hidden" unemployment
- Thus ... the unemployment rate may understate the severity of a recession

- But ... who really cares about unemployment anyway?
  - Humane Answer: We all should. Unemployment represents families that are struggling to make ends meet.
  - Economic Answer: Unemployment represents productive resources that are idle (inside the PPF!)
  - Selfish Answer: Unemployed people are more likely to rob employed people, i.e. increased crime
- All are good reasons for government intervention in labour markets

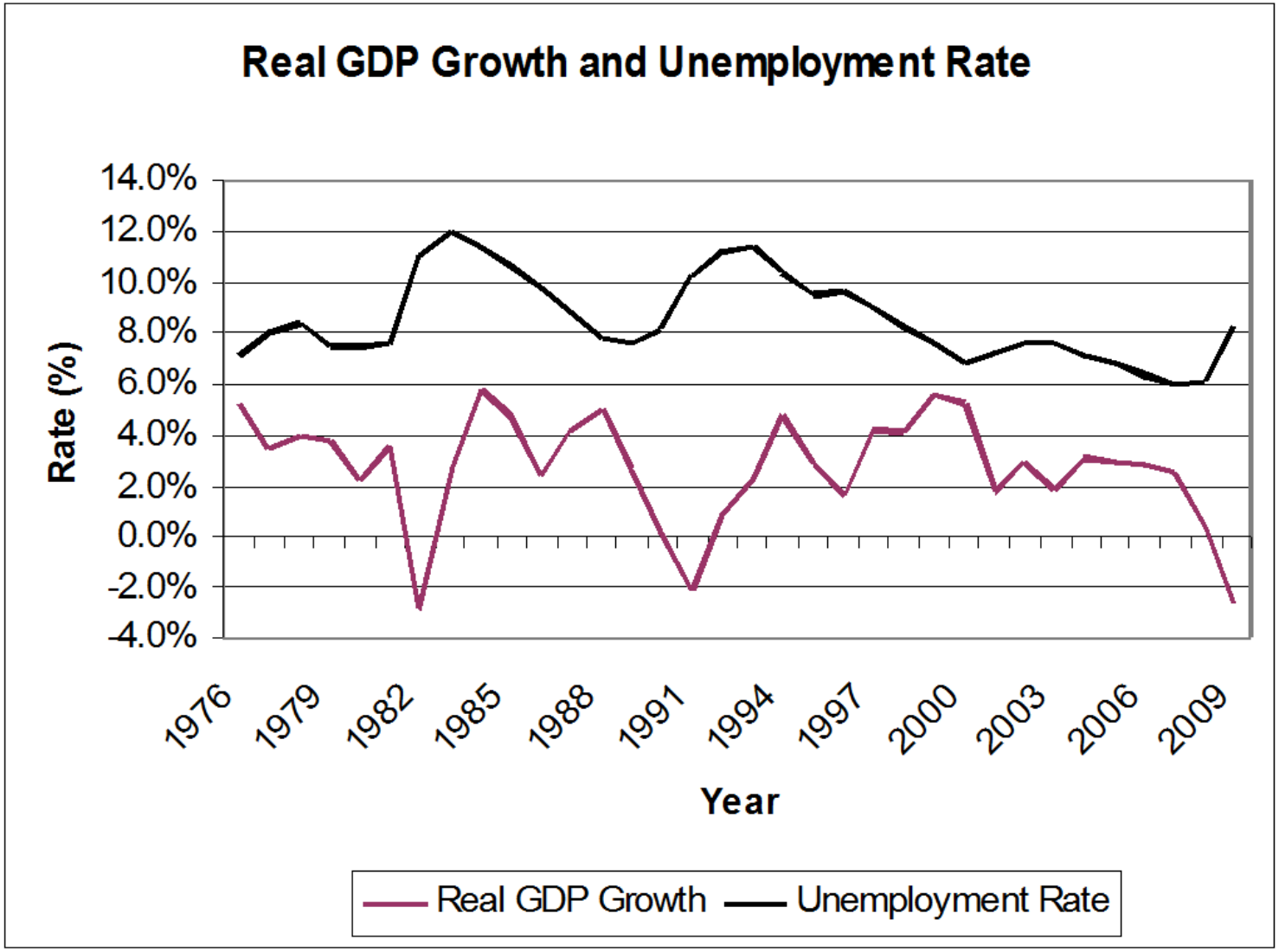


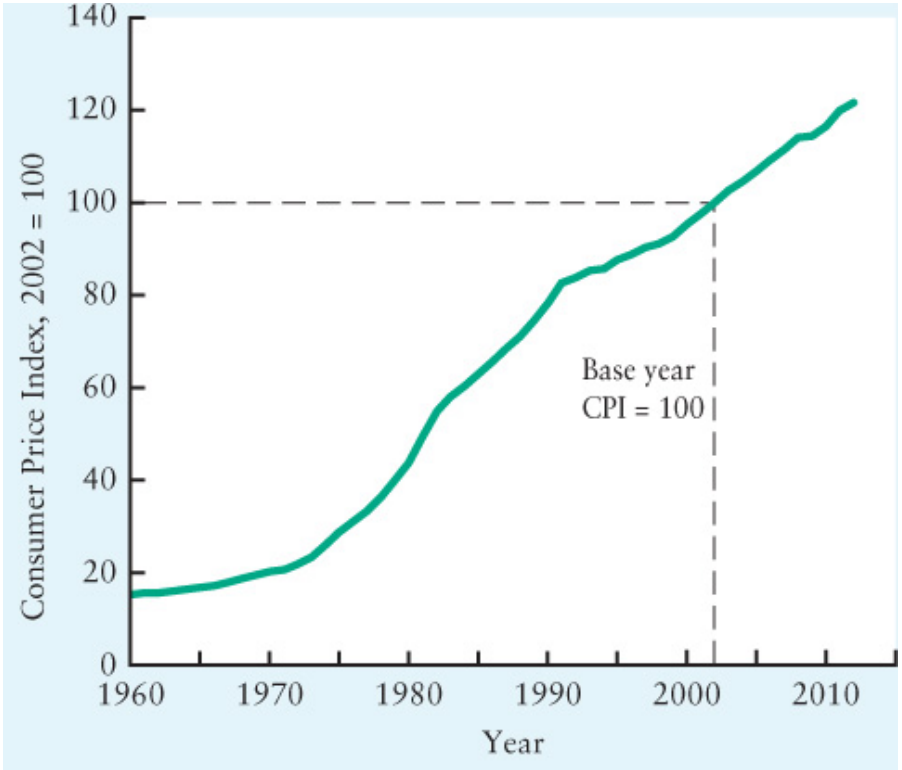

Figure : Real GDP Growth versus Unemployment Rate

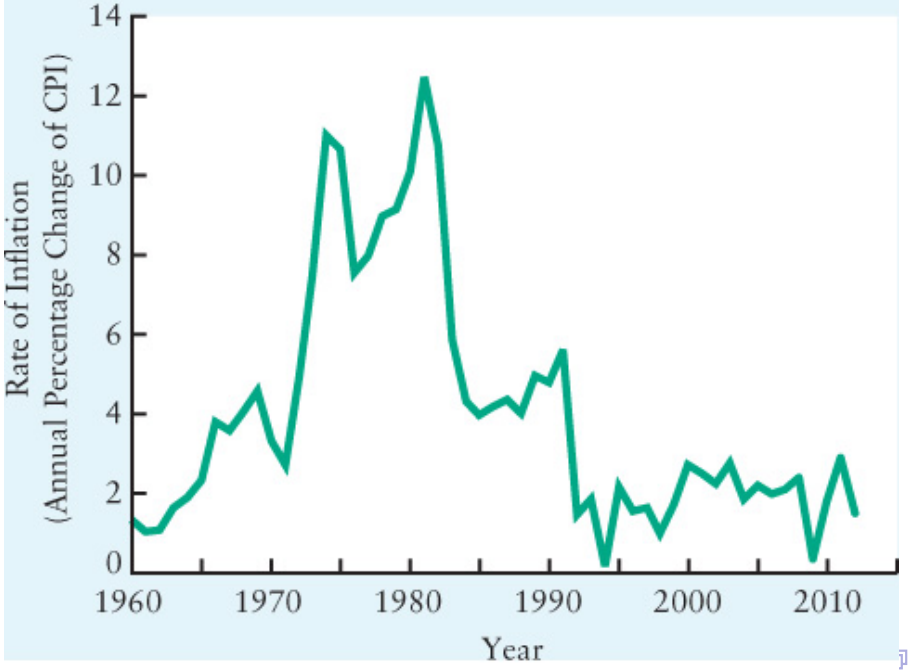
What do we learn from the previous slide?

- GDP Growth and Unemployment appear to be negatively related
- GDP recovers much faster than Unemployment (1-2 years versus 5+ years)
- How should we view the recovery in the 90s if we consider the decline in labour force participation as well?

# Inflation and the Price Level

- Price Level: the average level of all prices in the economy, expressed as an index number (see Ch. 2)
- Consumer Price Index (CPI): an index number that expresses the price of an average basket of goods consumed by an average household


Consumer Price Index, 2002 = 100
140
120
100
80
60
40
20
0
Base year
CPI = 100
1960
1970
1980
1990
2000
2010
Year


Rate of Inflation
(Annual Percentage Change of CPI)
14
12
10
8
6
4
2
0
1960
1970
1980
1990
2000
2010
Year

# Inflation

$$\text{Inflation Rate} = \frac{CPI_{t+1} - CPI_t}{CPI_t}$$

But who cares?

- An increase in the Price Level (i.e. inflation) *lowers* the purchasing power of money
- Purchasing Power: The amount of goods and services that can be purchased for a unit of money
- Imagine how your lifestyle would change if the price of everything you purchased doubled tomorrow
- Hyperinflation: when prices are rising so fast that you purchase two beers at a time when at the pub (Keynes)
  - E.g. Germany post-WW1

# Interest Rates

- Nominal Interest Rate: the price paid per dollar borrowed per period of time, typically expressed as an annual percentage rate (e.g. 6%)
- Real Interest Rate: the nominal interest rate adjusted for the change in purchasing power, i.e. inflation
  - Fisher Equation: Real Interest Rate $\approx$ Nominal Interest Rate - Inflation Rate
- The burden of borrowing depends on the *real* interest rate

Example:

- Suppose you lend a friend \$100 to be repaid with 10% interest after one year
- Over that year suppose the price level rises by 15%
- Q: Are you better off keeping your \$100 today or lending it to your friend?
- The relevant issue is how your purchasing power has changed

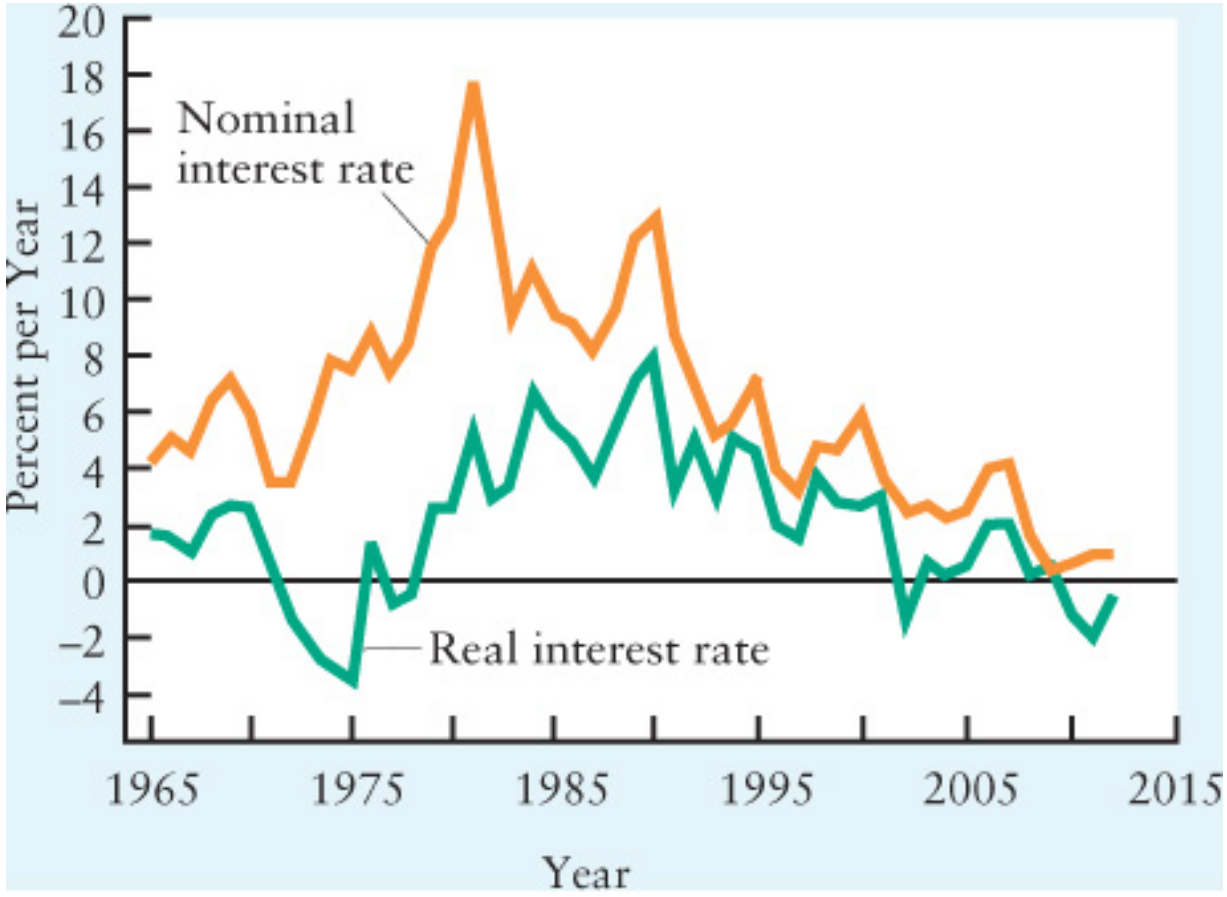





Figure : Real Interest Rate

Why are interest rates important?

- They determine the cost of borrowing for firms
  - effects investment and economic growth
- They determine the rate of return on household savings for retirement

# The International Economy

Definitions:

- Exchange Rate: The number of units of domestic currency required to purchase one unit of foreign currency
- Exports: the value of all domestically produced goods and services sold to firms, households, and governments in other countries
- Imports: the value of all foreign produced goods and services purchased from firms, households, and governments in other countries
- Exports represents an inflow of income into Canada where as imports represent an outflow
- Thus, the contribution to national income is net exports = exports - imports

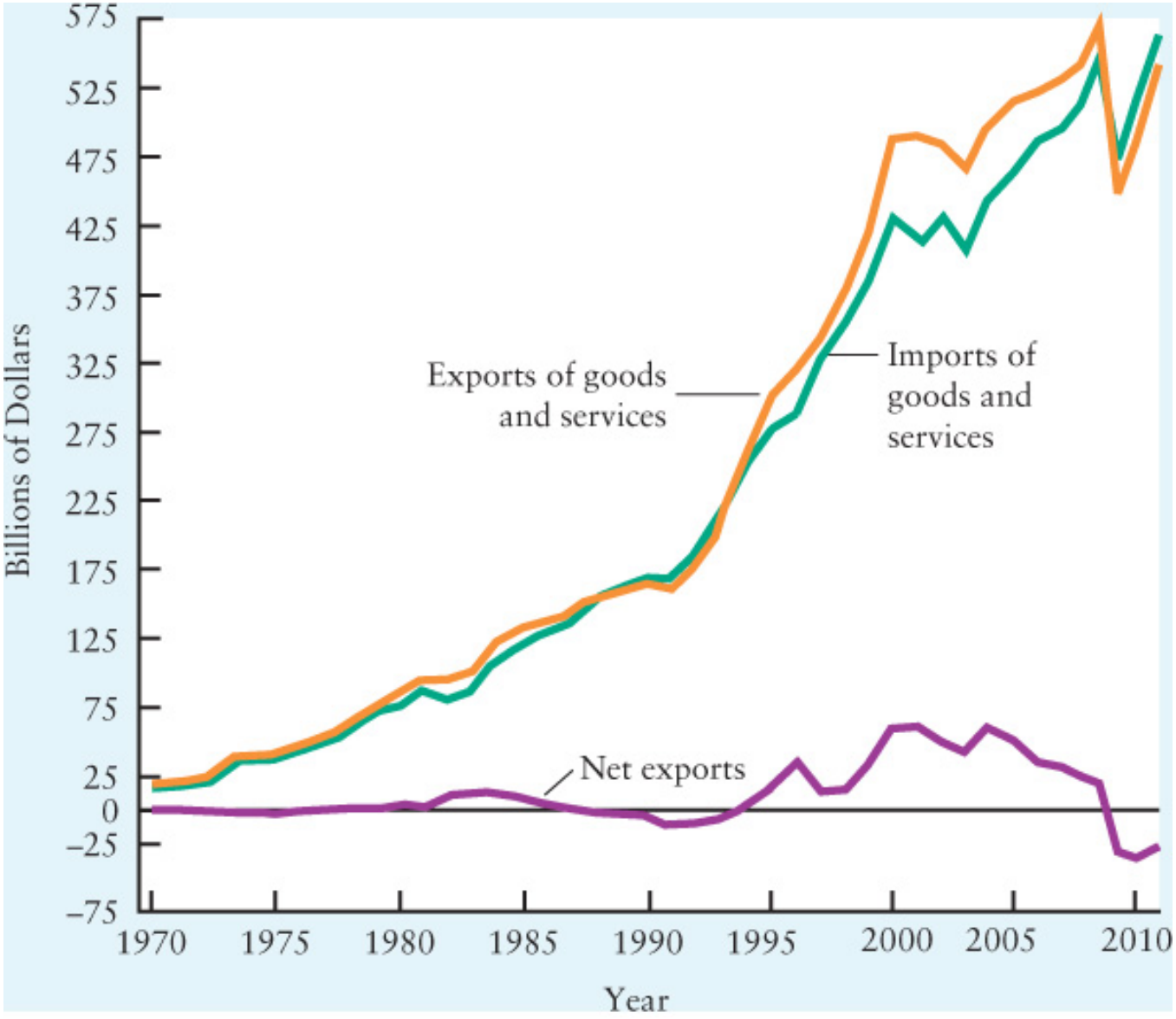





Figure : Net Exports

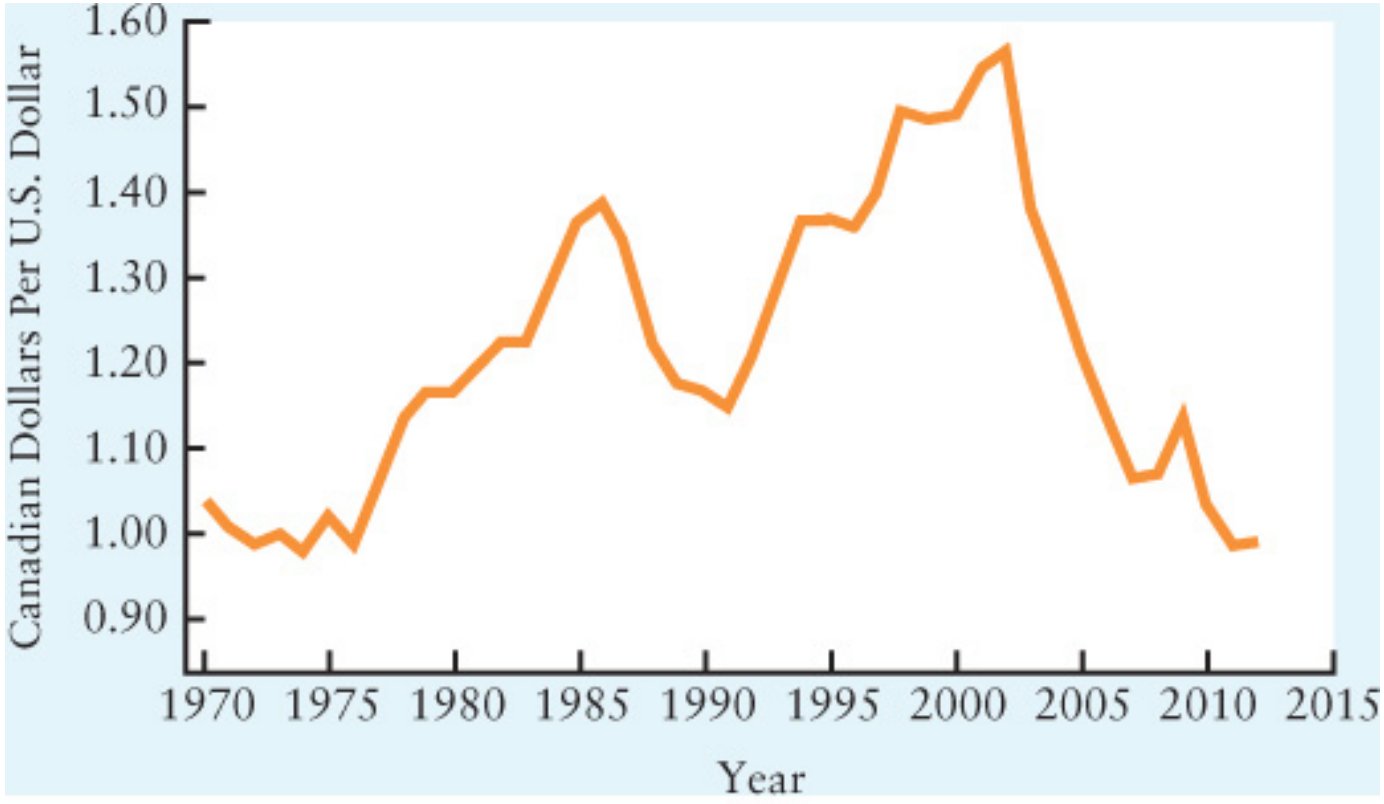





Figure : Exchange Rate

# Distribution of Income and Growth

We will reserve the data analysis and discussion of these topics until the final weeks of the semester ...