MACRO ECONOMICS

What is Macroeconomics?

Macroeconomics is the study of the large economy as a whole. It is the study of the big picture.

- Instead of analyzing one consumer, we analyze everyone.
- Instead of one business we study all businesses.

Why study the whole economy?

- **The field of macroeconomics was born during the <u>Great Depression</u>.**
- **Government didn't understand how to fix a depressed economy with 25% unemployment.**
- **Macro was created to:**
  1. **Measure the health of the whole economy.**
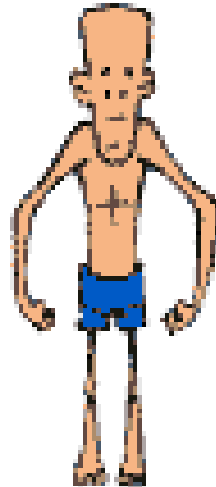 2. **Guide government policies to fix problems.**

For all countries there are three major economic goals:

1. Promote Economic Growth
2. Limit Unemployment
3. Keep Prices Stable (Limit Inflation)

In this unit we will analyze how each of these are measured.

Goal #1
Promote Economic Growth

How does a country measure economic growth?

How do we know how well the economy is doing?

- **Economists collect statistics on production, income, investment, and savings.**

- **This is called national income accounting.**

The most important measure of growth is <u>GDP</u>.

Gross Domestic Product (GDP) is the dollar value of all final goods and services produced within a country's borders in one year.

- **Dollar value- GDP is measured in dollars.**
- **Final Goods-GDP does not include the value of intermediate goods. Intermediate goods are goods used in the production of final goods and services.**
- **One Year-GDP measures annual economic performance.**

What does GDP tell us?

Just like calculating your own income, GDP measures how well the U.S. is doing financially.

How do you use GDP?

1. Compare to previous years (Is there growth?)
2. Compare policy changes (Did a new policy work?)
3. Compare to other countries (Are we better off?)

*CIA 2007 Estimate

How can you measure growth from year to year?

$$\% \text{ Change in GDP} = \frac{\text{Year 2 - Year 1}}{\text{Year 1}} \times 100$$

Mordor's GDP in 2007 was $4000
Mordor's GDP in 2008 was $5000
What is the % Change in GDP?

Hogwart's GDP in 2007 was $2,000
Hogwart's GDP in 2008 was $2,100
What is the % Change in GDP?

What is NOT included in GDP?

1. **Intermediate Goods**
   - **No Multiple Counting, Only <u>Final</u> Goods**
     - **EX: Price of finished car, not the radio, tire, etc.**

2. **Nonproduction Transactions**
   - **Financial Transactions (nothing produced)**
     - **Ex: Stocks, bonds, Real estate**
   - **Used Goods**
     - **Ex: Old cars, used clothes**

3. **Non-Market (Illegal) Activities**
   - **Ex: Illegal drugs, unpaid work**

How do we calculate GDP?

Four components of GDP:

1. Consumer Spending

    Ex: $5 Little Caesar's Pizza

2. Investments -When <u>businesses</u> put money back into their own business.

    Ex: Machinery or tools

3. Government Spending

    Ex: Bombs or tanks, *NOT social security*

4. Net Exports -Exports (*X*) – Imports (*M*)

    Ex: Value of 3 Ford Focuses minus 2 Hondas

$$GDP = C + I + G + X_n$$

Practice Calculating GDP

Included or not Included in GDP?

For each situation, identify if it is included in GDP the identify the category C, I, G, or X_n

1. $10.00 for movie tickets
2. $5M Increase in defense expenditures
3. $45 for used economics textbook
4. Ford makes new $2M factory
5. $20K Toyota made in Mexico
6. $10K Profit from selling stocks
7. $15K car made in US, sold in Canada
8. $10K Tuition to attend college
9. $120 Social Security payment to Bob
10. Farmer purchases new $100K tractor

1) You mow your lawn.
2) Your little brother mows the neighbor's lawn for $10.
3) Boeing (US company) buys steel from a Michigan steel company to make planes.
4) Amanda buys fabric from Wal-Mart to make curtains.
5) John buys a new house.
6) Government buys 10,000 rifles from Colt (US company).
7) You buy 500 shares of Microsoft.
8) You hire a broker to buy 500 shares of Microsoft.
9) Government gives grandma $250 social security check.

Nominal GDP vs. Real GDP
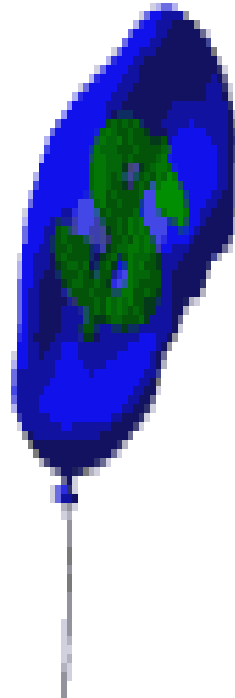
The Problem with GDP

If a country's GDP increased from **$4 Billion to $5 Billion** in one year, is the country experiencing economic growth?

Did the country definitely produce 25% more products?

What is Inflation?
- **A rising general level of prices**

EX: If apples are the only thing being produced

Year 1: 10 apples at $1 each; GDP = $10

Year 2: 10 apples x $1.25; GDP = $12.50

GDP is rising, but country is worse off!

Real vs. Nominal GDP

Nominal GDP is evaluated at current market prices.

Real GDP measures the value of economic output (GDP) adjusted for price changes (i.e., inflation or deflation).

Real GDP adjusts for inflation.

REAL GDP IS THE BEST MEASURE OF ECONOMIC GROWTH!

Real vs. Nominal GDP Example

2008
10 cars at $15,000 each = $150,000
10 trucks at $20,000 each = $200,000
Nominal GDP = $350,000

The GDP in year 20048 shows the dollar value of all final goods produced.

2009
10 cars at $16,000 each = $160,000
10 trucks at $21,000 each= $210,000
Nominal GDP = $370,000

The nominal GDP in year 2009 is higher which suggests that the economy is improving.

But how much is the **REAL GDP**? How do you get it?

2009
10 cars at $15,000 each = $150,000
10 trucks at $20,000 each= $200,000
REAL GDP = $350,000

Use 2008 Prices.

The Real GDP for 2009 is the same as 2008 after we adjust for inflation.

Does GDP accurately measure standard of living?

Standard of living (or quality of life) can be measured, in part, by how well the economy is doing…

But it needs to be adjusted to reflect the size of the nation's population.

Real GDP per capita (per person)

- **Real GDP per capita is** real GDP divided by the total population. It identifies on average how many products each person makes.

    Real GDP per capita is the best measure of a nation's standard of living.

Why do some countries have higher GDPs than others?

Productivity (TECHN)

1. **Technology**
2. **Economic System**
   Example#1: Capitalist countries have historically had more economic growth.
   - Capital (like robots) can produce more than people
   - Countries with more capital, can produce more products than countries without a lot of capital.
3. **Capital**
   Ex: Capital stock is machinery, tools, and man-made resources.
   Example#1: India has over a billion people (human resources) but relatively few capital resources and therefore a lower GDP than the U.S.
   Example#2: Japan has few natural resources but a high GDP
4. **Human Capital (Knowledge)**
5. **Natural Resources**
   Ex: Syria has a lower GDP because it is mostly desert.
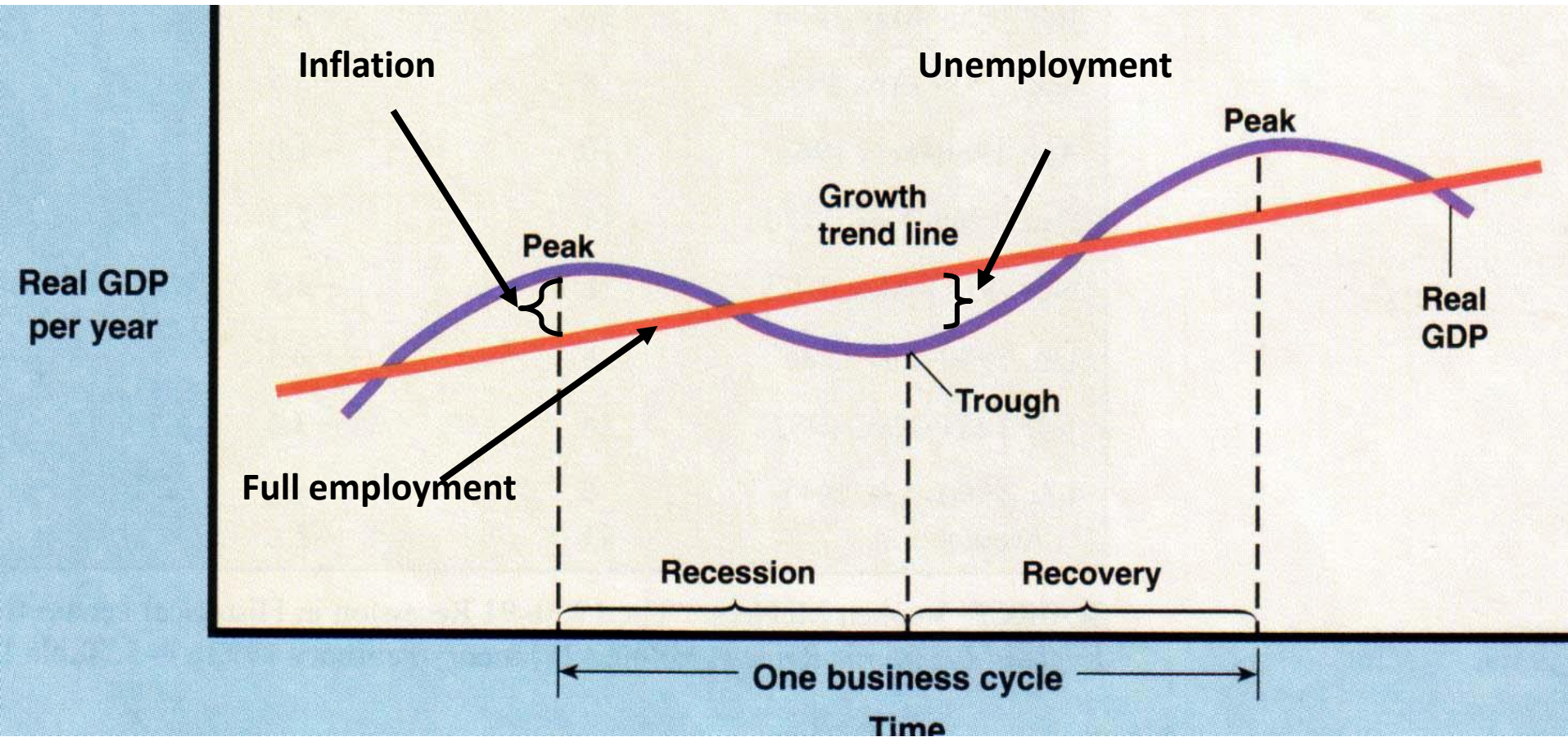
THE BUSINESS CYCLE

1. Define Macroeconomics
2. What are the 3 economic goals that all countries have
3. Identify the 3 key parts of the definition of GDP
4. How do we use GDP
5. Identify what is NOT included in GDP
6. List the 4 components of GDP
7. Define Inflation
8. Explain the difference between Nominal and Real GDP
9. Explain the usefulness of Real GDP per Capita
10. Name 10 horror films

THE BUSINESS CYCLE

The national economy fluctuates resulting in periods of boom and bust.

A Recession is 6 month period of decline in output, income, employment, and trade. (If really bad…then depression)

The Business Cycle

Why does the economy fluctuate?

- **Retailer and Producers send misleading information about consumer demand.**
- **Advances in tech, productivity, or resources.**
- **Outside influences (wars, supply shocks, panic).**

Who cares?

- **Macroeconomics measures these fluctuations and guides policies to keep the economy stable.**
- **The government has the responsibility to:**
  - **Promote long-term growth.**
  - **Prevent unemployment (resulting from a <u>bust</u>).**
  - **Prevent inflation (resulting form a <u>boom</u>).**

What is Economic Growth?

1. An increase in **<u>real GDP</u>** over time
2. An increase in **real GDP per capita over time (usually used to determine standard of living)**

Why is economic growth the goal of every society?

- **Provides better goods and services**
- **Increases wages and standard of living**
- **Allows more leisure time**
- **Economy can better meet wants**

Connection to PPC

The same information shown on the business cycle can be shown on a production possibilities curve.

1. **Full employment**
2. **Unemployment**
3. **Inflation**

The shifters of the PPC affect GDP
1. **Change in quantity/quality of resources**
2. **Changes in technology**
3. **Changes in trade**

Goal #2
Limit Unemployment

What is Unemployment?

The Unemployment rate

The percent of people in the <u>labor force</u> who want a job but are not working.

$$\text{Unemployment rate} = \frac{\text{\# unemployed}}{\text{\# in labor force}} \times 100$$

Who is in the Labor Force?

- **Above 16 years old**
- **<u>Able</u> and <u>willing</u> to work**
- **Not institutionalized (jails, hospitals)**
- **Not in military, in school full time, or retired**

Why is a stay at home mom not unemployed?

Three Types of Unemployment

3 Types of Unemployment

#1. Frictional Unemployment

- "Temporarily unemployed" or being between jobs.
- Individuals are qualified workers with transferable skills but they aren't working.

Examples:

- High school or college graduates looking for jobs.
- Individuals that were fired and are looking for a better job.

You're Fired!

3 Types of Unemployment

Seasonal Unemployment

- **This is a specific type of frictional unemployment which is due to time of year and the nature of the job.**

- **These jobs will come back**

Examples:

- **Professional Santa Clause Impersonators**

- **Construction workers in Michigan**

#2. Structural Unemployment

- **Changes in the structure of the labor force make some skills obsolete.**
- **Workers <u>DO NOT</u> have transferable skills and these jobs will never come back.**
- **Workers must learn new skills to get a job.**
- **The permanent loss of these jobs is called "creative destruction." (Why?)**

Examples:

- **VCR repairmen**
- **Carriage makers**

3 Types of Unemployment

Technological Unemployment

•**Type of structural unemployment where automation and machinery replace workers causing unemployment**

Examples:

•**Auto assemblers fired as robots take over production**

• **Producers of Capital Goods (tractors) fire assemblers**

3 Types of Unemployment

#3 Cyclical Unemployment

- **Unemployment that results from economic downturns (recessions).**

  - **As demand for goods and services falls, demand for labor falls and workers are fired.**

Examples:

- **Steel workers laid off during recessions.**

- **Restaurant owners fire waiters after months of poor sales due to recession.**

This sucks!
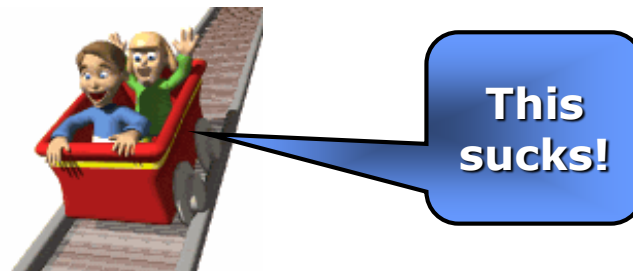
The Natural Rate of Unemployment

Two of the of the three types of unemployment are unavoidable:
- **Frictional unemployment**
- **Structural unemployment**
- **Together they make up the natural rate of unemployment (NRU).**

We are at full employment if we have only the natural rate of unemployment.
- **This is the normal amount of unemployment that we SHOULD have.**
  - **The number of jobs seekers equals the number of jobs vacancies.**

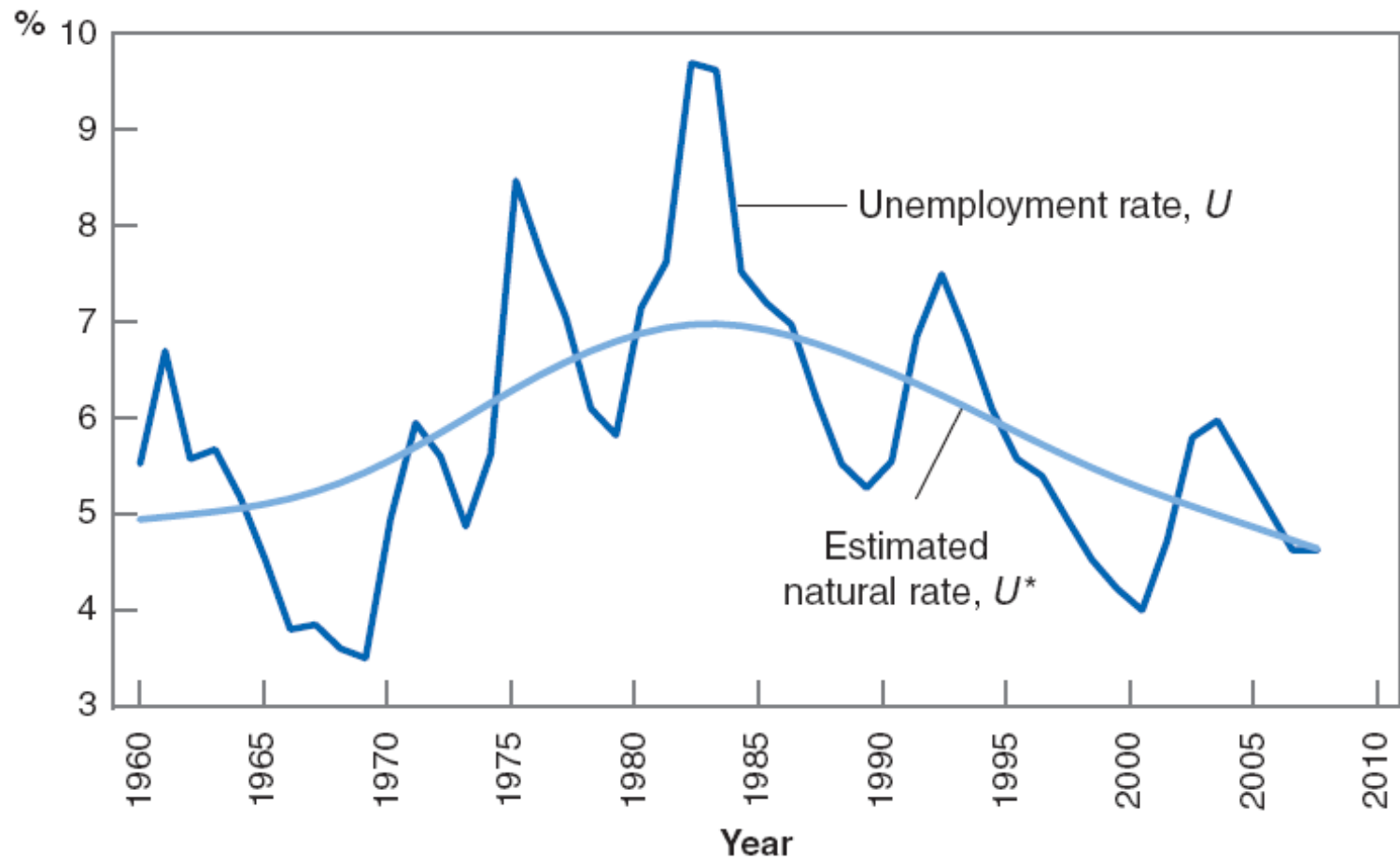# The Natural Rate of Unemployment

Full employment means <u>NO</u> Cyclical unemployment!

Economists generally agree that an unemployment rate of around 4 to 6 % is full employment.

4-6% Unemployment = NRU

Okun's Law: When unemployment rises 1 percent above the natural rate, GDP falls by about 2 percent

FIGURE 12.2 The U.S. Natural Rate of Unemployment, 1960–2007

Government Unemployment Report Number	Who's Counted	Percent/Rate Reported for June 2009	Anything Else Interesting?
U4			
U5			
U6			
U3: Official Unemployment Rate			

The Natural Rate of Unemployment

The natural rate in France and Germany is around 8–10%. Why?

- **Some economists attribute the difference to more generous unemployment benefits in European countries**
  - In the U.S. unemployment benefits last for 6 months
  - Unemployment benefits in some European countries are indefinite
  - The generous benefits reduce incentives to search for a job

Criticisms of the Unemployment Rate

What is wrong with the unemployment rate?

It can misdiagnose the actual unemployment rate because of the following:

Disgruntled job seekers-
- Some people are no longer looking for a job because they have given up.

Part-Time Workers-
- Someone who wants more shifts but can't get them is still considered employed.

Race/Age Inequalities-
- Hispanics – 5.8% for January
- African American- 8.9% for January
- Teenagers- 15.3% for January

Illegal Labor-
- Many people work under the table.

Goal #3
LIMIT INFLATION

Country and Time-
Zimbabwe, 2008
Annual Inflation Rate-
79,600,000,000%
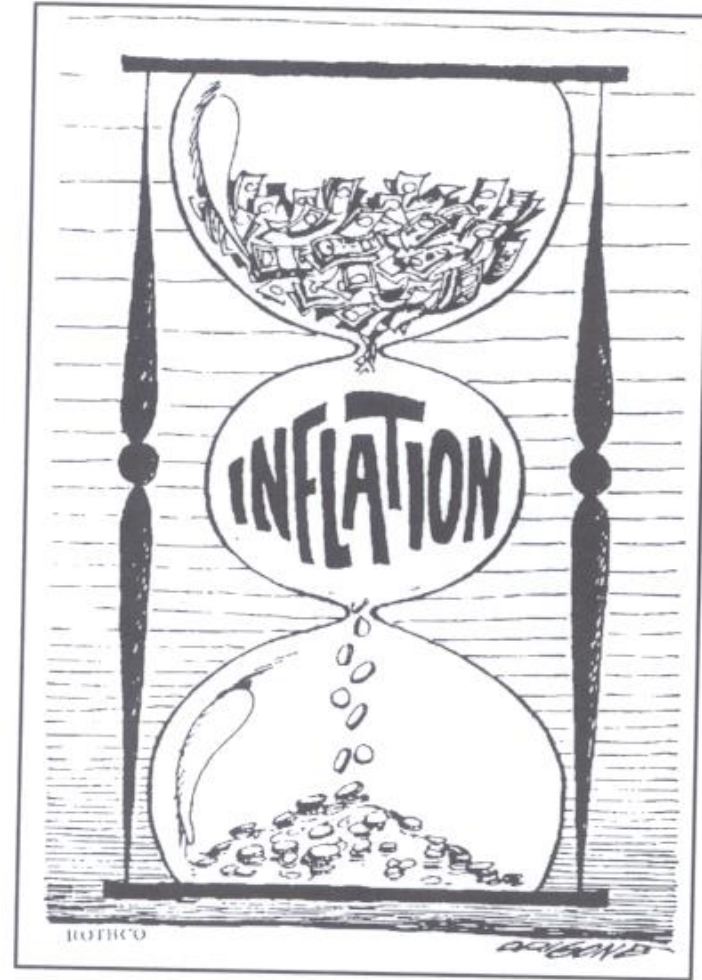**Time for Prices to Double-**
24.7 hours

What is Inflation?

Inflation is rising general level of prices

Inflation reduces the "purchasing power" of money

Examples:

- **It takes $2 to buy what $1 bought in 1982**
- **It takes $6 to buy what $1 bought in 1961**

- **When inflation occurs, each dollar of income will buy fewer goods than before.**

How is Inflation measured?

The government tracks the prices of the same goods and services each year.

- This **"market basket"** is made up of about 300 ([video](#)) commonly purchased goods
- **The Inflation Rate-% change in prices in 1 year**
- They also compare changes in prices to a given base year (usually 1982)
- Prices of subsequent years are then expressed as a percentage of the base year
- **Examples:**
  - **2005 inflation rate was 3.4%**
  - **U.S. prices have increase 98.3% since 1982 (base year).**
  - **The inflation rate in Bolivia in 1985 was 50,000%**
    - **This is called Hyperinflation**
    - **A $25 meal today would cost $12,525 a year later**

Is Inflation Good or Bad?

Identify which people are helped and which are hurt by unanticipated inflation?

1. A man who lent out $500 to his friend in 1960 and is still waiting to be paid back.
2. A tenant who is charged $850 rent each year.
3. An elderly couple living off fixed retirement payments of $2000 a month
4. A man that borrowed $1,000 in 1995 and paid it back in 2006
5. A women who saved a paycheck from 1950 by putting it under her mattress

Make a T-Chart

Hurt by Inflation	Helped by Inflation

Cost-of-Living-Adjustment (COLA)
Some works have salaries that mirror inflation.
They negotiated wages that rise with inflation

Measuring Inflation

Consumer Price Index (CPI)

Consumer Price Index (CPI)

The most commonly used measurement inflation for consumers is the Consumer Price Index

Here is how it works:
- The base year is given an index of 100
- To compare, each year is given an index # as well

$$CPI = \frac{\text{Price of market basket}}{\text{Price of market basket in base year}} \times 100$$

1997 Market Basket: Movie is $6 & Pizza is $14
    Total = $20 **(Index of Base Year = 100)**

2009 Market Basket: Movie is $8 & Pizza is $17
    Total = $25 **(Index of   125**

- This means inflation increased 25% b/w '97 & '09
- Items that cost $100 in '97 cost $125 in '09

Problems with the CPI

1. **Substitution Bias- As prices increase for the fixed market basket, consumers buy less of these products and more substitutes that may not be part of the market basket. (Result: CPI may be higher than what consumers are really paying)**

2. **New Products- The CPI market basket may not include the newest consumer products. (Result: CPI measures prices but not the increase in choices)**

3. **Product Quality- The CPI ignores both improvements and decline in product quality. (Result: CPI may suggest that prices stay the same though the economic well being has improved significantly)**

Calculating Nominal GDP, Real GDP, and Inflation

Calculating CPI

Year	Units of Output	Price Per Unit	Nominal, GDP	Real, GDP	CPI/ GDP Deflator (Year 1 as Base Year)	Inflation Rate
1	10	$ 4				
2	10	5				
3	15	6				
4	20	8				
5	25	4				

Make year one the base year

$$CPI = \frac{\text{Price of market basket in the particular year}}{\text{Price of the same market basket in base year}} \times 100$$

Calculating CPI

Year	Units of Output	Price Per Unit	Nominal, GDP	Real, GDP	CPI/ GDP Deflator (Year 1 as Base Year)	Inflation Rate
1	10	$ 4				
2	10	5				
3	15	6				
4	20	8				
5	25	4				

Inflation Rate

$$\% \text{ Change in Prices} = \frac{\text{Year 2 - Year 1}}{\text{Year 1}} \times 100$$

Practice

Year	Units of Output	Price Per Unit	Nominal, GDP	Real, GDP	Consumer Price Index (Year 3 as Base Year)
1	5	$ 6			
2	10	8			
3	20	10			
4	40	12			
5	50	14			

Make year three the base year

$$CPI = \frac{\text{Price of market basket in the particular year}}{\text{Price of the same market basket in base year}} \times 100$$

Three Causes of Inflation

1. If everyone suddenly had a million dollars, what would happen?
2. What two things cause prices to increase? Use Supply and Demand

3 Causes of Inflation

2. DEMAND-PULL INFLATION
"Too many dollars chasing too few goods"

DEMAND PULLS UP PRICES!!!

- **Demand increases but supply stays the same. What is the result?**
- **A Shortage driving prices up**
- **An overheated economy with excessive spending but same amount of goods.**

3 Causes of Inflation

3. COST-PUSH INFLATION

Higher production costs increase prices

A negative supply shock increases the costs of production and forces producers to increase prices.

Examples:

- Hurricane Katrina destroyed oil refineries and causes gas prices to go up. Companies that use gas increase their prices.

The Wage-Price Spiral

A Perpetual Process:

1.Workers demand raises

2.Owners increase prices to pay for raises

3. High prices cause workers to demand higher raises

4. Owners increase prices to pay for higher raises

5. High prices cause workers to demand higher raises

6. Owners increase prices to pay for higher raises