AP MACRO ECONOMICS
MR. LIPMAN

MEASURING ECONOMIC PERFORMANCE

KRUGMAN MODULES 10-15

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.

Keys to the Unit

- 1. Circular Flow Diagrams
  - (Module 10)
- 2. Gross Domestic Production (GDP)
    - Module 10 & 11
- 3. Unemployment
  - (Module 12 & 13)
- 4. Inflation
  - (Module 14 & 15)
  5. Money & Inflation & the Phillips curve
    (Modules 33 & 34)

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

The most important measure of growth is GDP.

Gross Domestic Product (GDP) = dollar value of all final goods and services produced in a country 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.**

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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 does not measure a nation's happiness just output
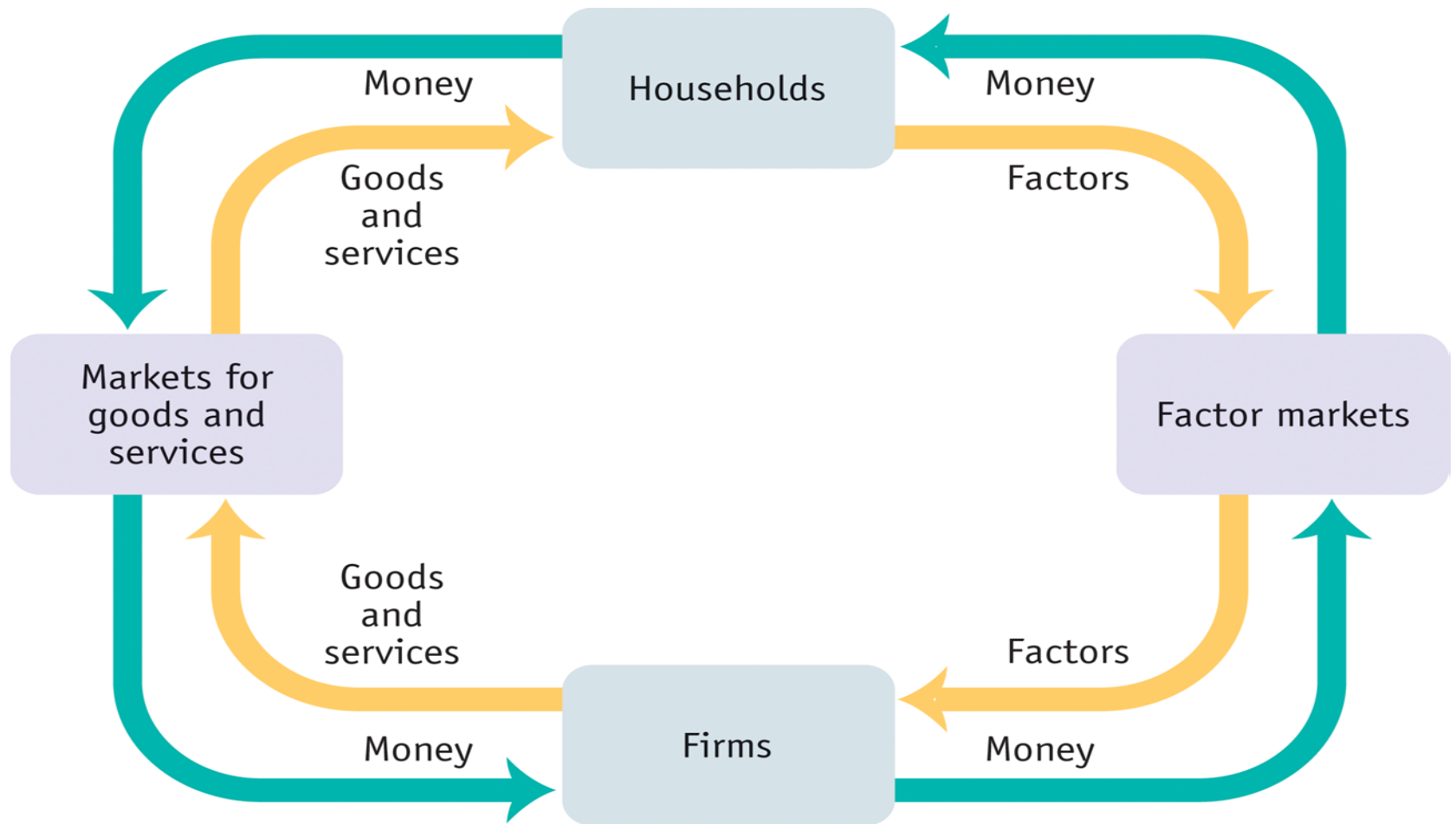
Keys to the Circular Flow Chart

- Chart has 4 sectors:
  - Households
  - Firms
  - Government
  - Rest of the world

  All are connected by 3 types of markets

  Factor; Market for Goods & Services; Financial Markets

Circular Flow Diagram: Inflow of money into each market or sector must equal the outflow of money coming from that market or sector

Calculating GDP

Three Ways of calculating GDP:

1. **Expenditure Approach (aka Aggregate Spending)**

   THIS IS THE ONE WE WILL FOLLOW

2. **Income Approach (aka Sum of total factor income)**

3. **Total Value Approach of all final goods and services**

All ways generate the same amount since every dollar spent is a dollar of income.

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1. **Expenditures Approach**-**Add up all the spending** on final goods and services produced in a given year.

GDP = C + I + G + Xn (exports-imports)

C IS CONSUMER SPENDING

I IS INVESTMENT SPENDING

G IS GOVERNMENT PURCHASES OF GOODS AND SERVICES

X IS EXPORTS - IMPORTS

Expenditures Approach

Four components of GDP:

1. Consumer Spending (C)
   Ex: $5 Spent on Pizza

2. Investments (I) -Businesses putting money back into their own business.

3. Government Spending
   Ex: Bombs or tanks, *NOT social security*

4. Net Exports -Exports (*X*) – Imports (*M*)
   Ex: Value of 2 Ford Focuses minus 3 Hondas

Remember: GDP = C + I + G + Xn (exports–imports)

What is <u>NOT</u> included in GDP

1. **Intermediate Goods**
   - **No Multiple Counting, Only <u>Final</u> Goods**
     - **EX: Price of finished car, not the radio, tire, etc.**
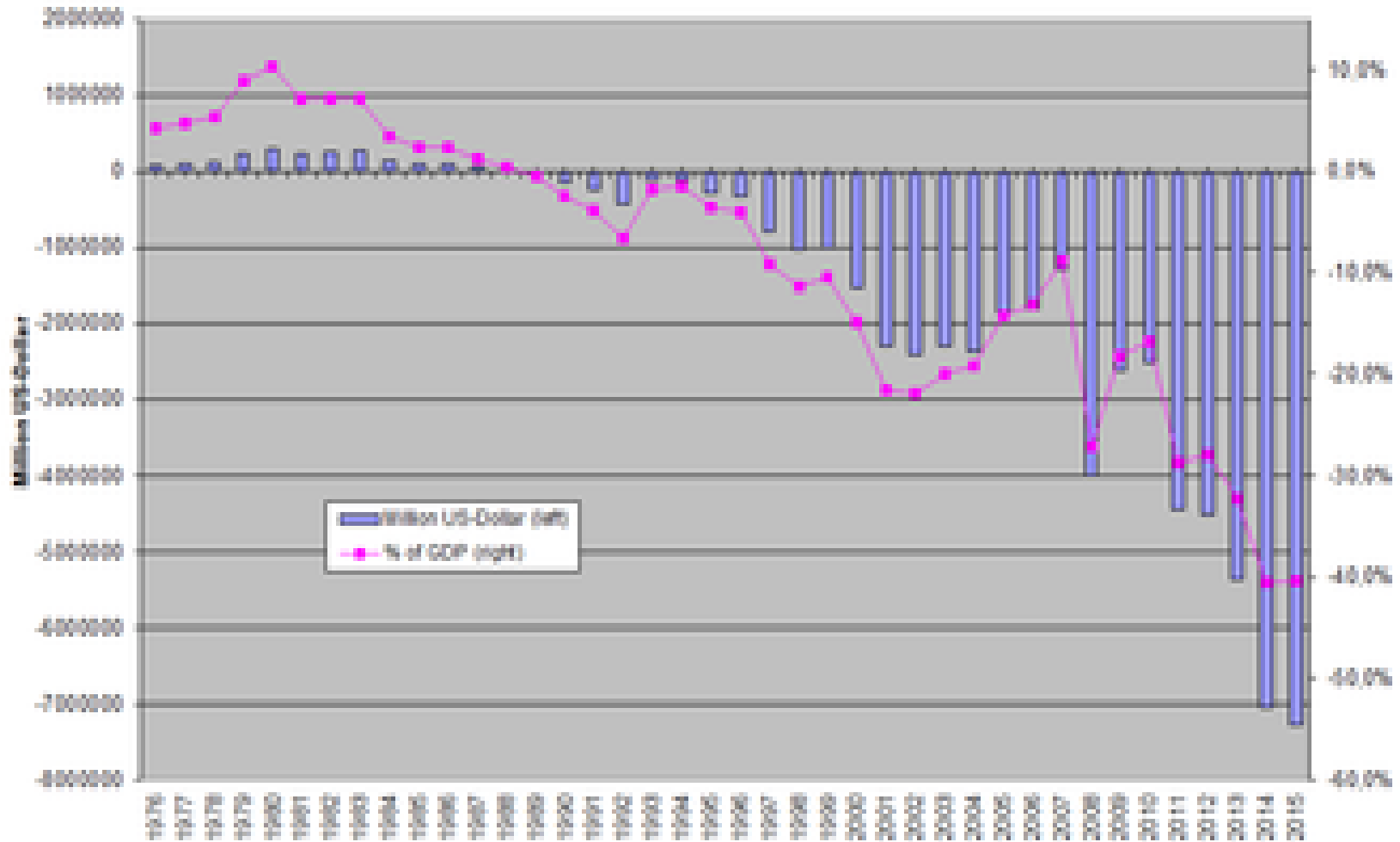2. **Nonproduction Transactions**
   - **Financial Transactions (nothing produced)**
     - **Ex: Stocks, bonds, Real estate**
   - **Used Goods**
     - **Ex: Old cars, used clothes**
3. **Non-Market (Illegal) Activities**
   - **Ex: Illegal drugs, unpaid work**

America's Trade Balance

U.S.A. net international investment position

For each situation, identify if it is included in GDP, add the total up and then 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

GDP=$7,125,010

1. $10.00 for movie tickets
2. $5M Increase in defense expenditures

X $45 for used economics textbook

4. Ford makes new $2M factory

X $20K Toyota made in Mexico

X $10K Profit from selling stocks

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X $120 Social Security payment to Bob

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Real vs. Nominal GDP (Module 11)

Nominal GDP is GDP measured in current prices. It does not account for inflation from year to year.

Real GDP adjusts for inflation and is the BEST MEASURE OF ECONOMIC GROWTH

Per Capita GDP measures a country's GDP by the size of its population.

Divide the GDP for a year by the number of people in the nation to obtain the best measurement of a nations growth and productivity.

How can you measure growth from year to year?
Chain-Linking: Use a base year and a later year

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

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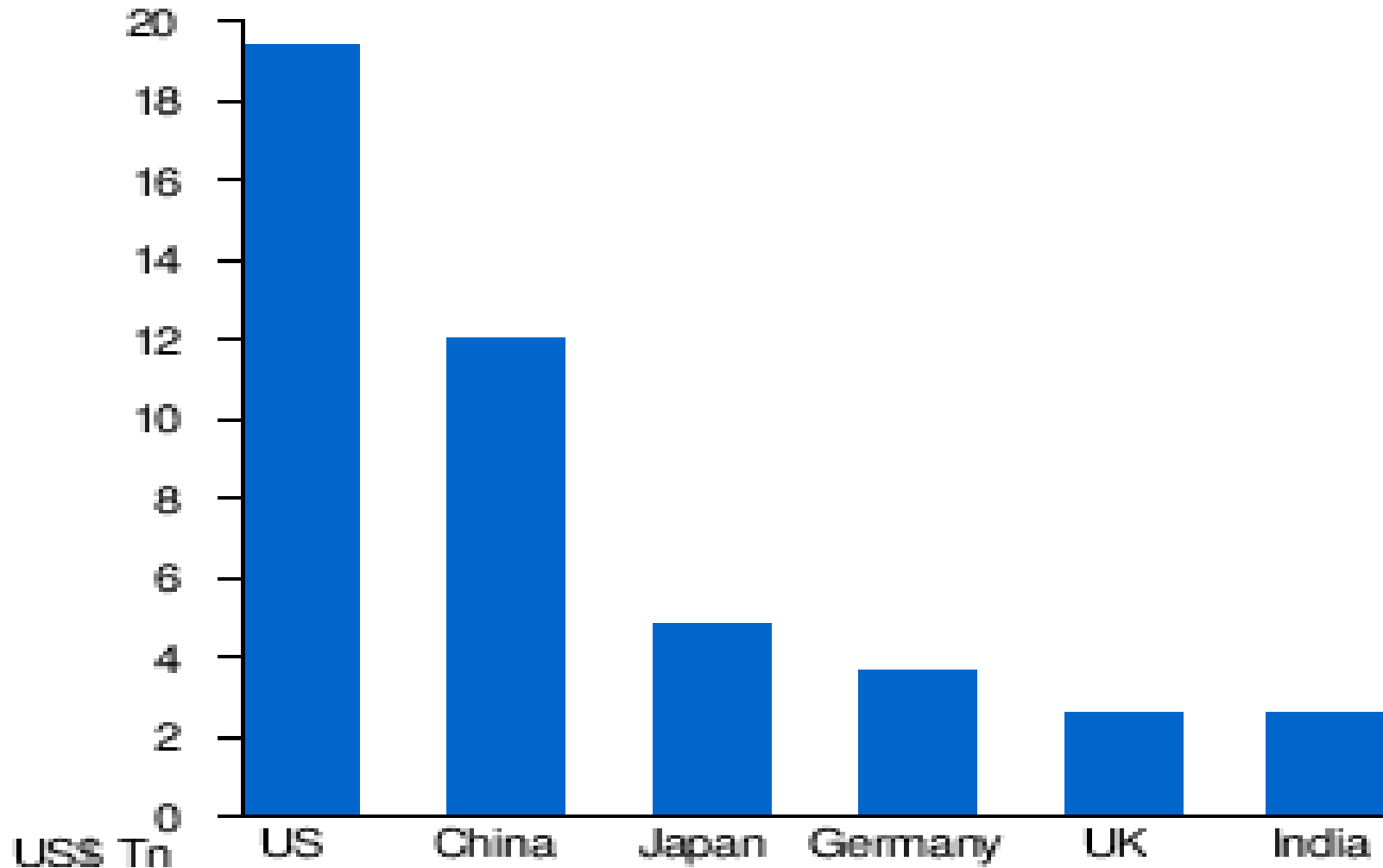
The Real GDP for 2009 is the same as 2008 after we adjust for inflation.

Year 2-Year1   x 100

    Year 1

World Ranking of GDP 2016

Top 10 Nations GDP Per Capita

RANK	COUNTRY	GDP - PER CAPITA (PPP)	DATE OF INFO
1	Qatar	$ 145,300	2010 est.
2	Liechtenstein	$ 141,100	2008 est.
3	Luxembourg	$ 81,800	2010 est.
4	Bermuda	$ 69,900	2004 est.
5	Norway	$ 59,100	2010 est.
6	Singapore	$ 57,200	2010 est.
7	Jersey	$ 57,000	2005 est.
8	Kuwait	$ 51,700	2010 est.
9	Brunei	$ 50,300	2010 est.
10	United States	$ 47,400	2010 est.

What is the most popular movie of all time?

What is the problem with this method?

Nominal Box Office Receipts

Rank	Title	Studio	Lifetime Gross
1	Avatar	20th Century Fox	$749,710,176
2	Titanic	Paramount Pictures	$600,788,188
3	The Dark Knight	Warner Bros.	$533,345,358
4	Star Wars Episode IV: A New Hope	20th Century Fox	$460,998,007
5	Shrek 2	DreamWorks	$441,226,247
6	E.T. the Extra-Terrestrial	Universal Pictures	$435,110,554
7	Star Wars Episode I: The Phantom Menace	20th Century Fox	$431,088,301
8	Pirates of the Caribbean: Dead Man's Chest	Walt Disney Pictures	$423,315,812
9	Spider-Man	Columbia Pictures	$403,706,375
10	Transformers: Revenge of the Fallen	Paramount Pictures/DreamWorks	$402,111,870
11	Star Wars Episode III: Revenge of the Sith	20th Century Fox	$380,270,577
12	Toy Story 3	Walt Disney Pictures	$379,529,000
13	The Lord of the Rings: The Return of the King	New Line Cinema	$377,027,325
14	Spider-Man 2	Columbia Pictures	$373,585,825
15	The Passion of the Christ	Newmarket Films	$370,782,930

Real Box Office Receipts (adjusted for inflation)

Rank	Title	Year
1	Gone With The Wind	1939
2	Star Wars	1977
3	The Sound of Music	1965
4	E.T. the Extra-Terrestrial	1982
5	The Ten Commandments	1956
6	Titanic	1997
7	Jaws	1975
8	Doctor Zhivago	1965
9	The Exorcist	1973
10	Snow White and the Seven Dwarfs	1937

Rank	Title	Year
11	One Hundred and One Dalmatians	1961
12	Star Wars Episode V: The Empire Strikes Back	1980
13	Ben-Hur	1959
14	Avatar	2009
15	Star Wars Episode VI: Return of the Jedi	1983
16	The Sting	1973
17	Raiders of the Lost Ark	1981
18	Jurassic Park	1993
19	The Graduate	1967

Real GDP "deflates" nominal GDP by adjusting for inflation in terms of a base year prices.
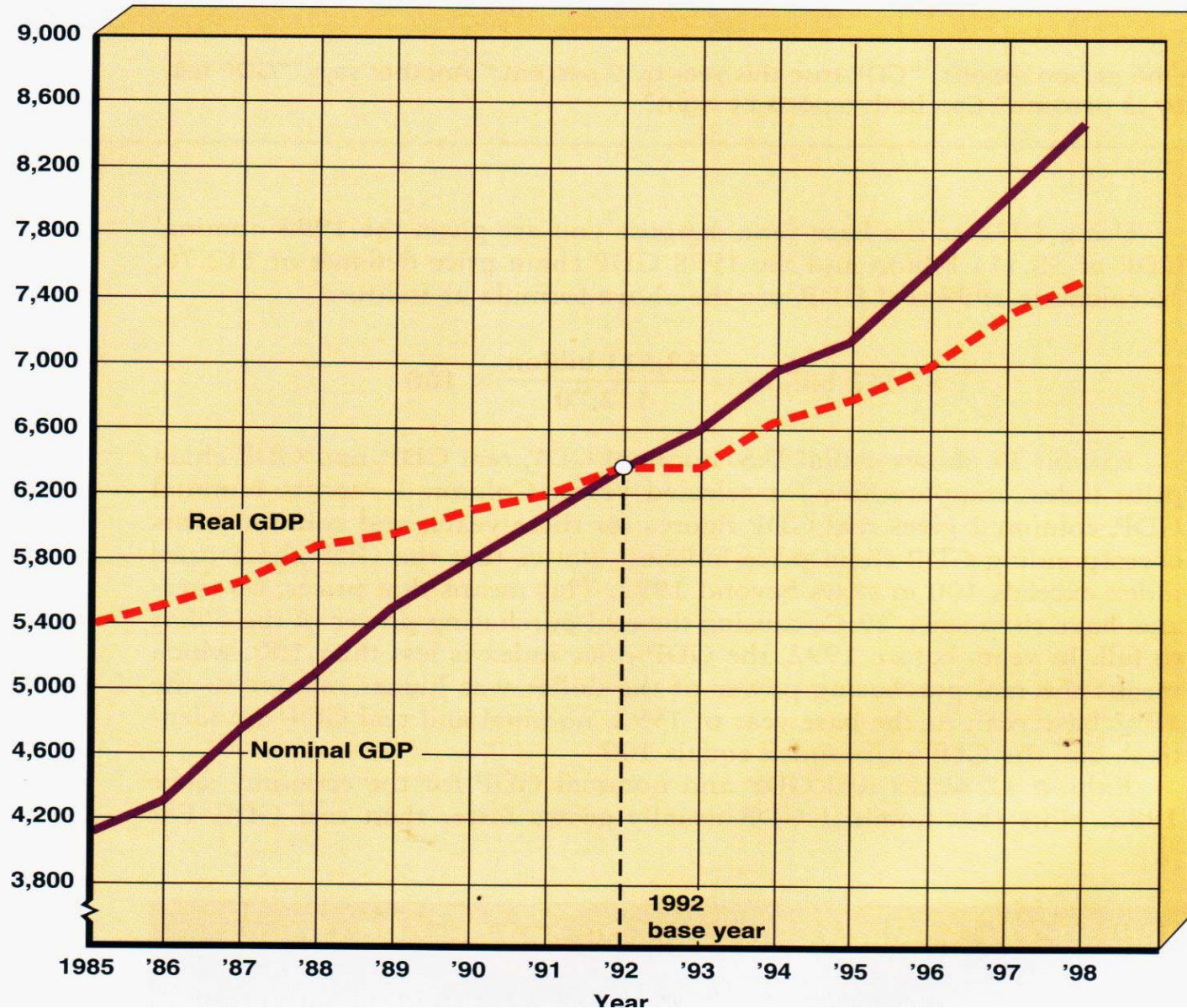
Three Types of Unemployment (Module 12 & 13)

1. Frictional
2. Structural
3. Cyclical

#1. Frictional Unemployment

• **Temporarily unemployed or between jobs.**

• **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!

Seasonal Unemployment

- 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 Claus Impersonators

- Construction workers in Michigan

#2. Structural Unemployment

- **Changes in the structure of the labor force makes the worker's skills obsolete and the jobs will not be coming back.**
- **Workers must learn new skills to get a job.**
- **The permanent loss of these jobs is called "creative destruction."**

Examples:
- **VCR repairmen**
- **Carriage makers**

Technological Unemployment

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

Examples:

•**Auto assemblers fired as robots take over production**
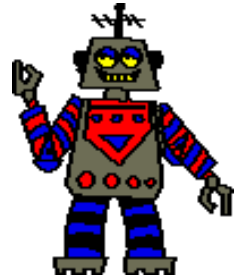
- **Producers of Capital Goods (tractors) fire assembly workers**

#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!
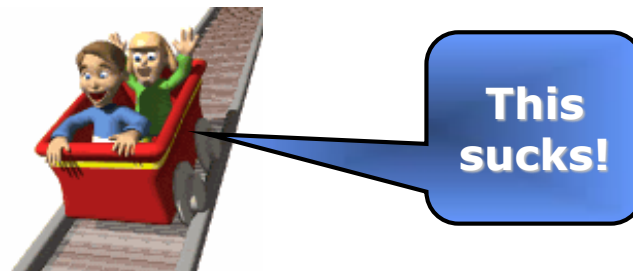
HOW TO CALCULATE UNEMPLOYMENT

- **Rule**: Unemployed are those who are jobless, looking for work and available to work.
  - IF NOT SEEKING WORK THEN NOT COUNTED AS UNEMPLOYED

- Survey of 60K people done once a month

- **LABOR FORCE** = total of those actually employed and those who are unemployed

  - Unemployment Rate = <u># of unemployed</u>   x 100
    - »   Labor Force

The Natural Rate of Unemployment (NRU)

Two of the three types of unemployment are unavoidable:
- **Frictional unemployment** (TEMPORARY)
- **Structural unemployment** (OBSOLETE)

- **Together they make up the natural rate unemployment (NRU).**
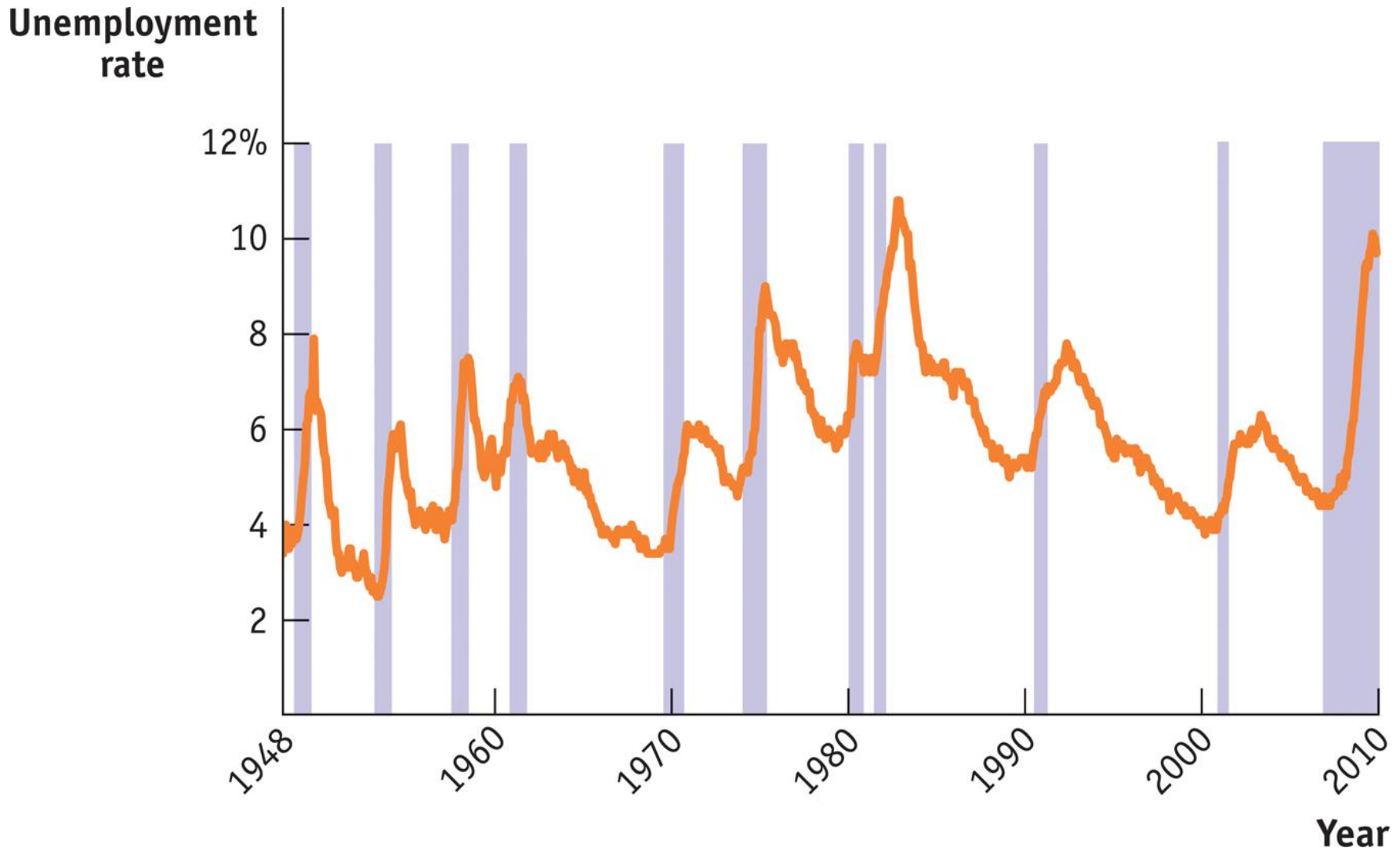
America is at full employment if we have NRU.

This is the normal amount of unemployment that we SHOULD have.

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

Economists generally agree that unemployment rate of around 4 to 6 % is full employment.
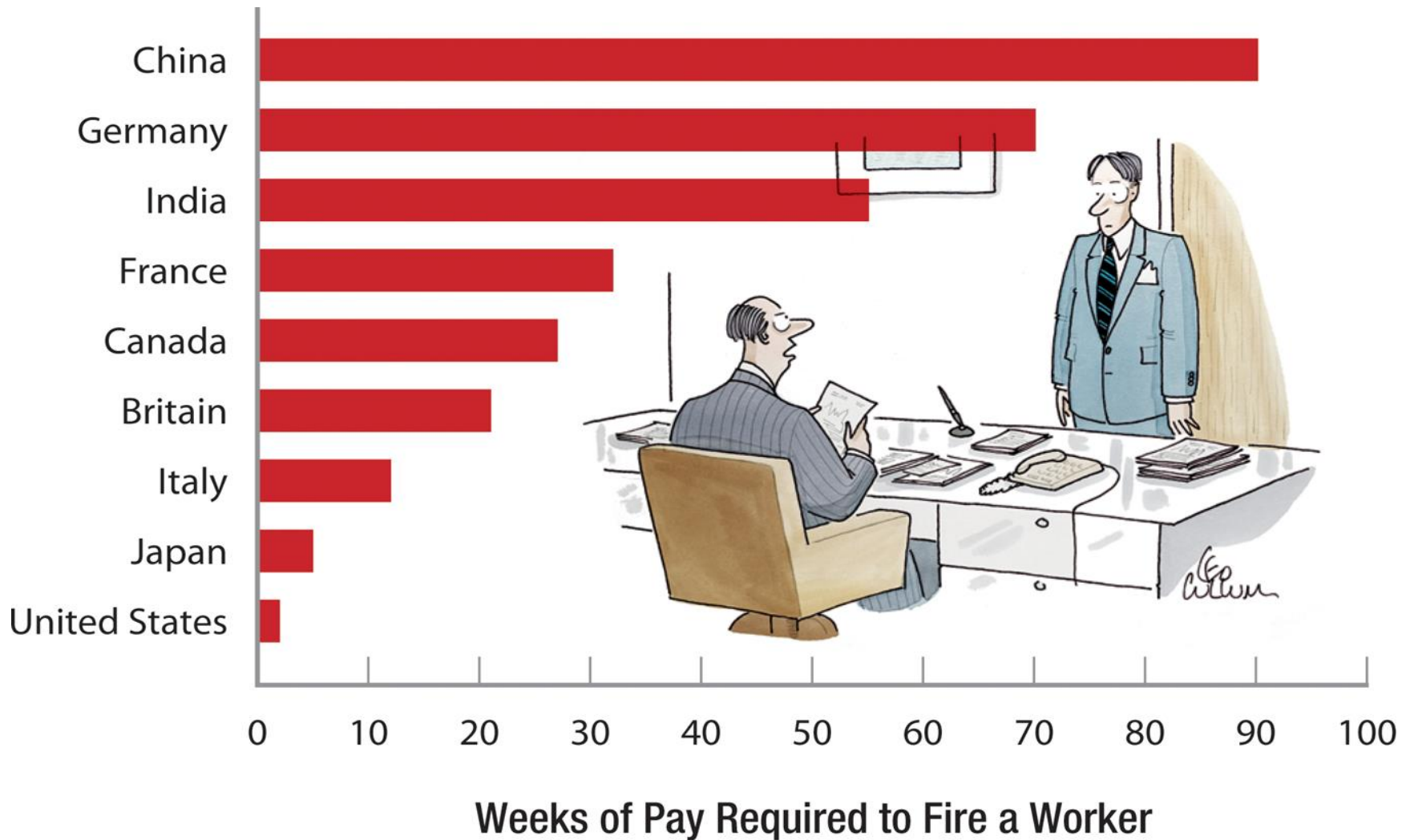**4-6% Unemployment = NRU**

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

Rule: There is a negative relationship between *unemployment* and *growth*. Unemployment rises in a recession and usually falls during a period of economic expansion.

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

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

Weeks of Pay Required to Fire a Worker

Firing workers can be costly but in America the amount received for unemployment is always less than the actual wages that would have been received

What's wrong with the unemployment rate?

Can hide actual unemployment rate:

Discouraged job seekers-
- Some people are no longer looking for a job because they have given up.
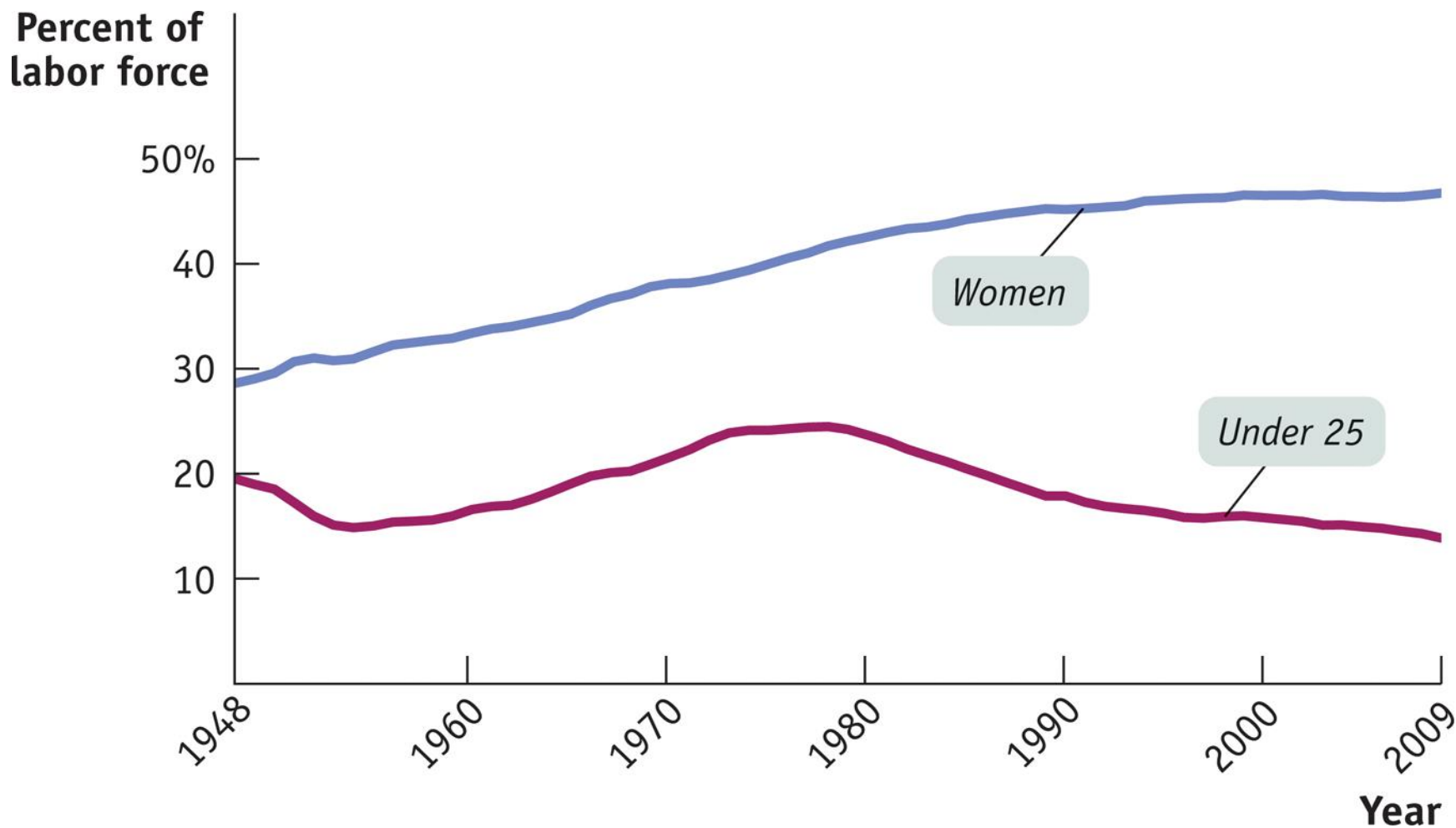
Part-Time Workers-
- Someone who wants more shifts but can't get them is still considered employed.

Race/Age Inequalities-
- Hispanics – 10% for Sept. 2016
  - But teenage rate is 25%
- African American- 14% for Sept. 2016
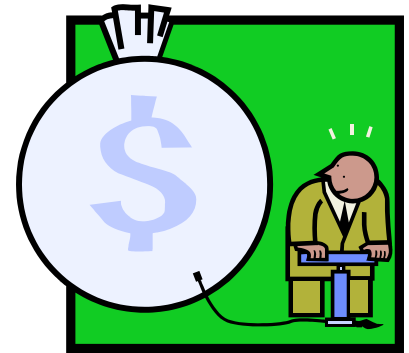 - But teenage rate is 41%

Illegal Labor-
- Many people work under the table.

The Changing Makeup of the U.S. Labor Force 1948–2009

Inflation: Module 14 & 15

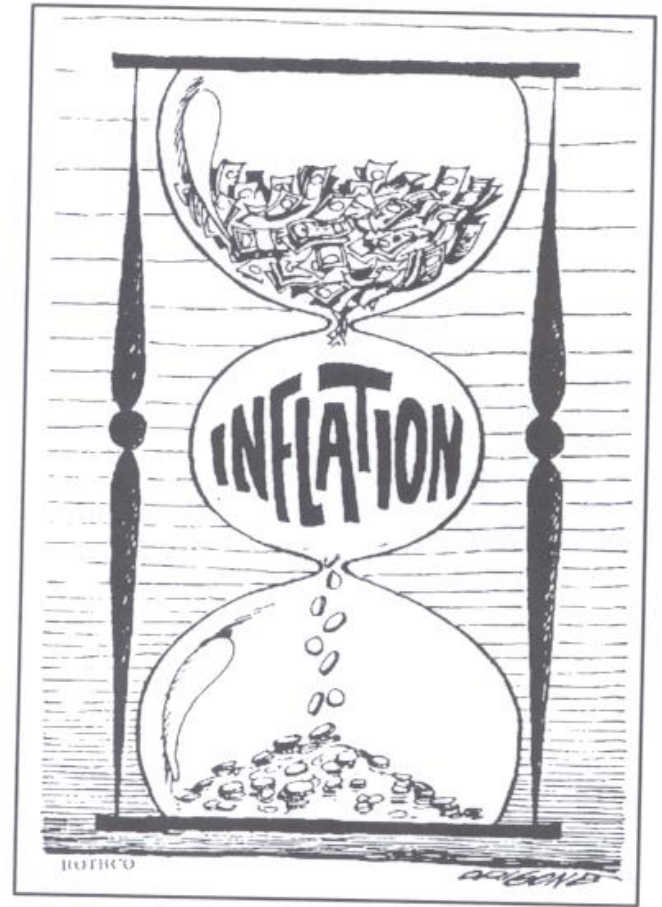## WHAT IS INFLATION AND HOW IS IT CAUSED?

Inflation is a general rising level of prices PRICES

It reduces the "purchasing power" of money

Examples:

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

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

INFLATION

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

Three Causes of Inflation

1. Printing too much Money

2.Demand-Pull Inflation

3. Cost-Push Inflation

1. The Government Prints TOO MUCH Money (The Quantity Theory)

- **Governments that keep printing money to pay debts end up with hyperinflation.**
- **There are more "rich" people but the same amount of products.**
- **Result: Banks refuse to lend and GDP falls**

Examples:
- **Bolivia, Peru, Brazil**
- **Germany after WWI**

This is known as Hyper Inflation

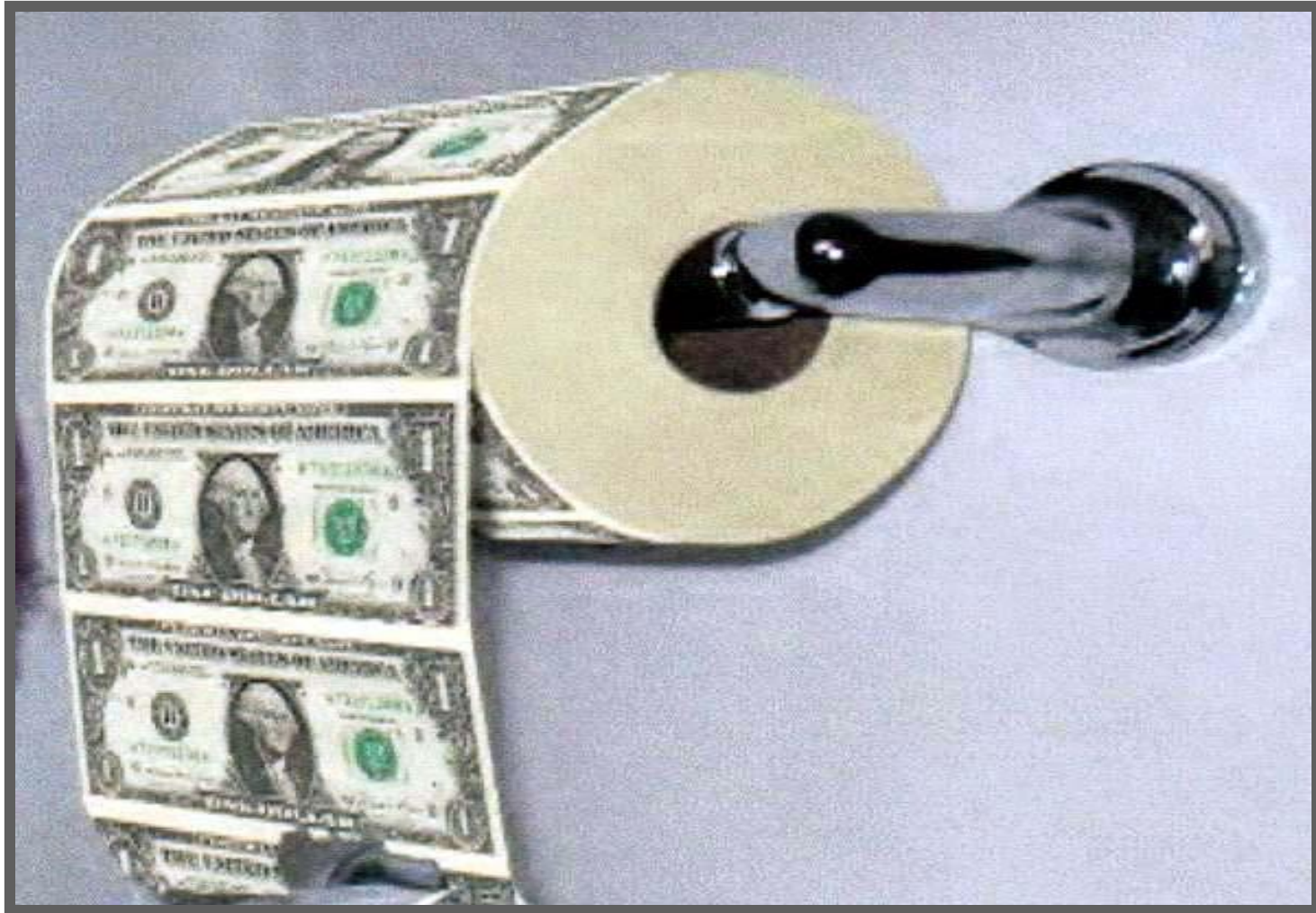----------------------------

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

What would happen if the government printed money to pay off the national debt all at once?

2. DEMAND-PULL INFLATION

"Too many dollars chasing too few goods"

DEMAND PULLS UP PRICES!!!

- **Demand increases but supply stays the same. The result is a shortage driving prices up.**
  - **An overheated economy with excessive spending but same amount of goods.**

3. COST-PUSH INFLATION

Higher production costs increase prices

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

Examples:

- Hurricane Katrina destroyed oil refineries and caused gas prices to go up. Companies that use gas then increased their prices.
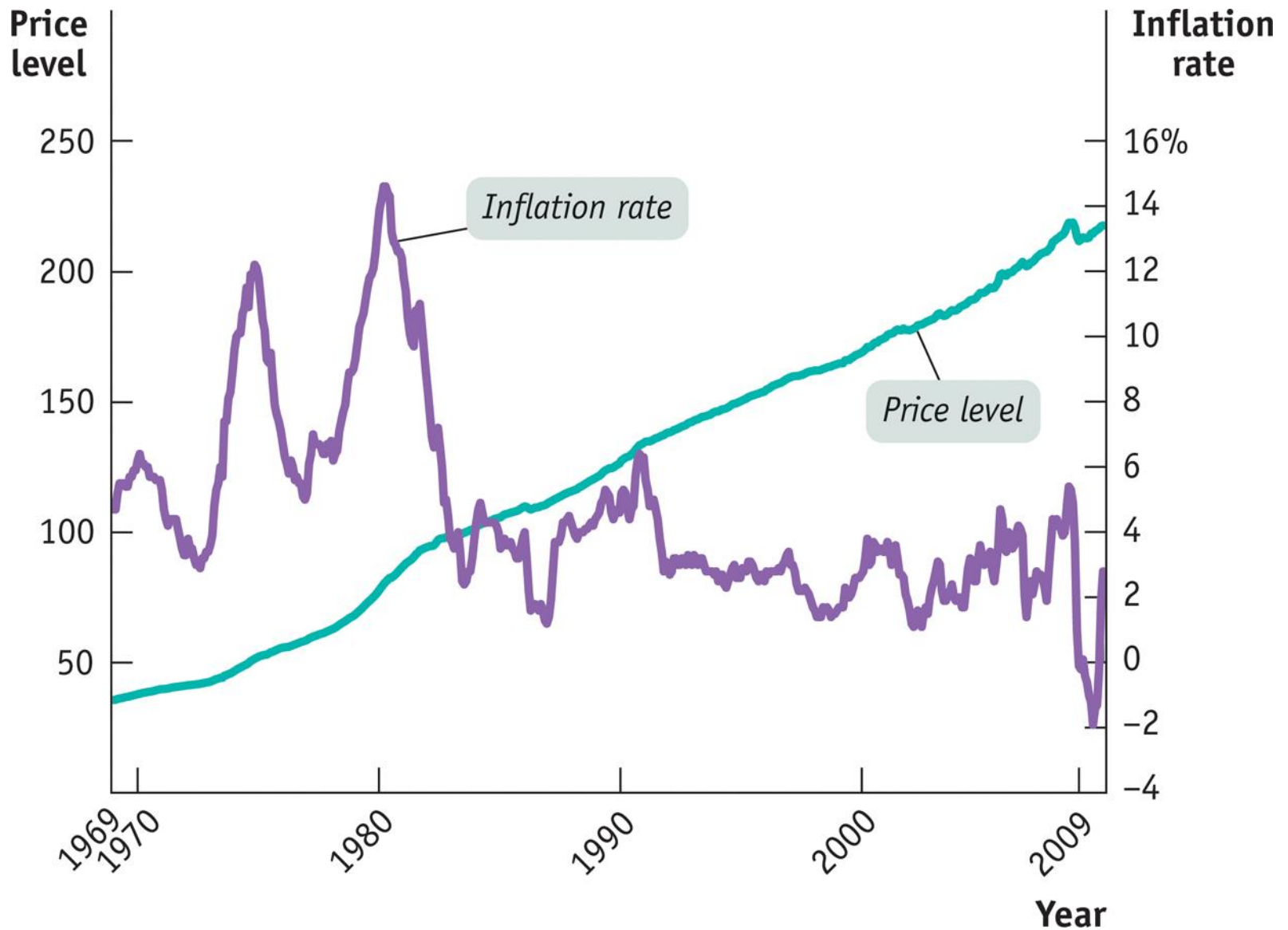
Cost-Push Inflation

"THIS NEW TAX PLAN SOUNDS PRETTY GOOD... WE GET A 9% CUT AND BUSINESS PICKS UP THE BURDEN...."

Measuring Inflation

- Inflation Rate Percentage ='s

$$\frac{\text{Price Yr 2 - Price Yr 1}}{\text{Price Yr 1}} \times 100$$

The process of bringing the inflation rate down is known as *Disinflation* and it is difficult to do because you must temporarily slow growth or even depress the economy.

Price Level versus the Inflation Rate, 1969–2009….Notice how by 2009 costs of items are much higher than the actual inflation rate thus reducing the purchasing power of the consumer.

Key Inflation Terms

- *Shoe-leather costs*
  - Increased transaction costs of shopping around

- *Menu Costs*
 - $ it costs to change prices

- *Unit of Accounts Costs*
  - inflation makes $ less reliable as a unit of measurement

Giving raises to workers is not always a good thing:
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
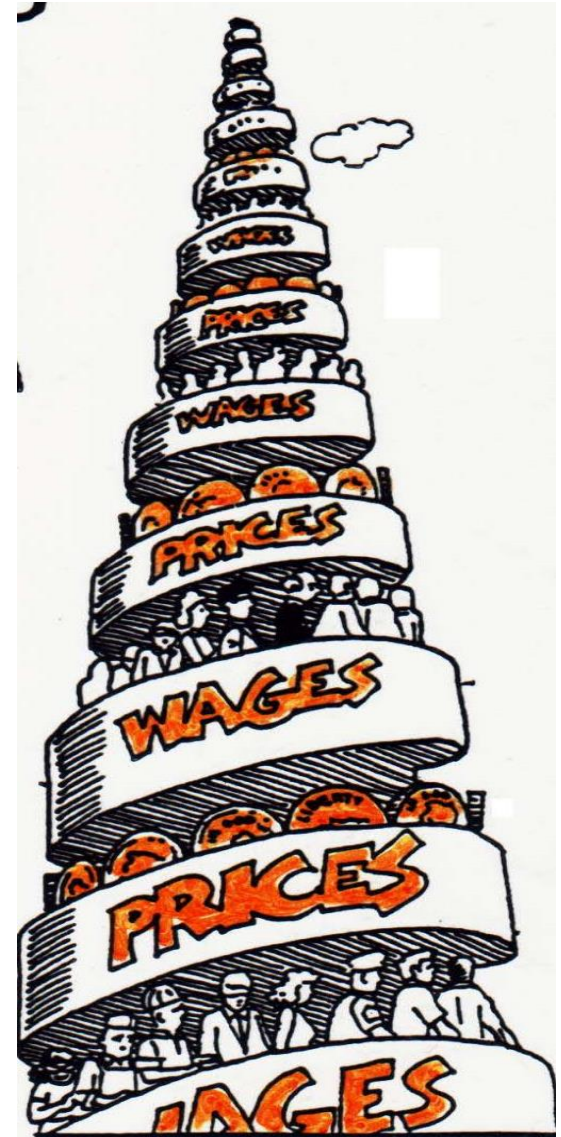
| Hurt by Inflation	Helped by Inflation
• *Lenders*-People who lend money (at fixed interest rates) • People with fixed incomes • Savers	• *Borrowers*-People who borrow money • A business where the price of the product increases faster than the price of resources

Cost-of-Living-Adjustment (COLA)

Some works have salaries that mirror inflation. They negotiated wages that rise with inflation

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.
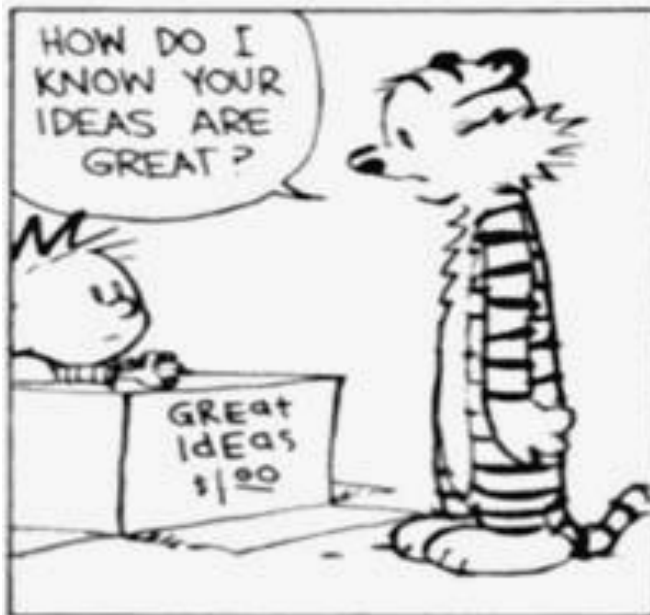
Interest Rates

What are interest rates? Why do lenders charge them?

Real Interest Rates-
The percentage increase in <u>purchasing power</u> that a borrower pays to the lender. (adjusted for inflation)
Real = nominal interest rate - expected inflation

Nominal Interest Rates-
the percentage increase in <u>money</u> that the borrower pays back to the lender not adjusting for inflation.

Nominal vs. Real Interest Rates

Example #1:

You lend out $100 with 20% interest. Inflation is 15%.
A year later you get paid back $120.

What is the nominal and what is the real interest rate?
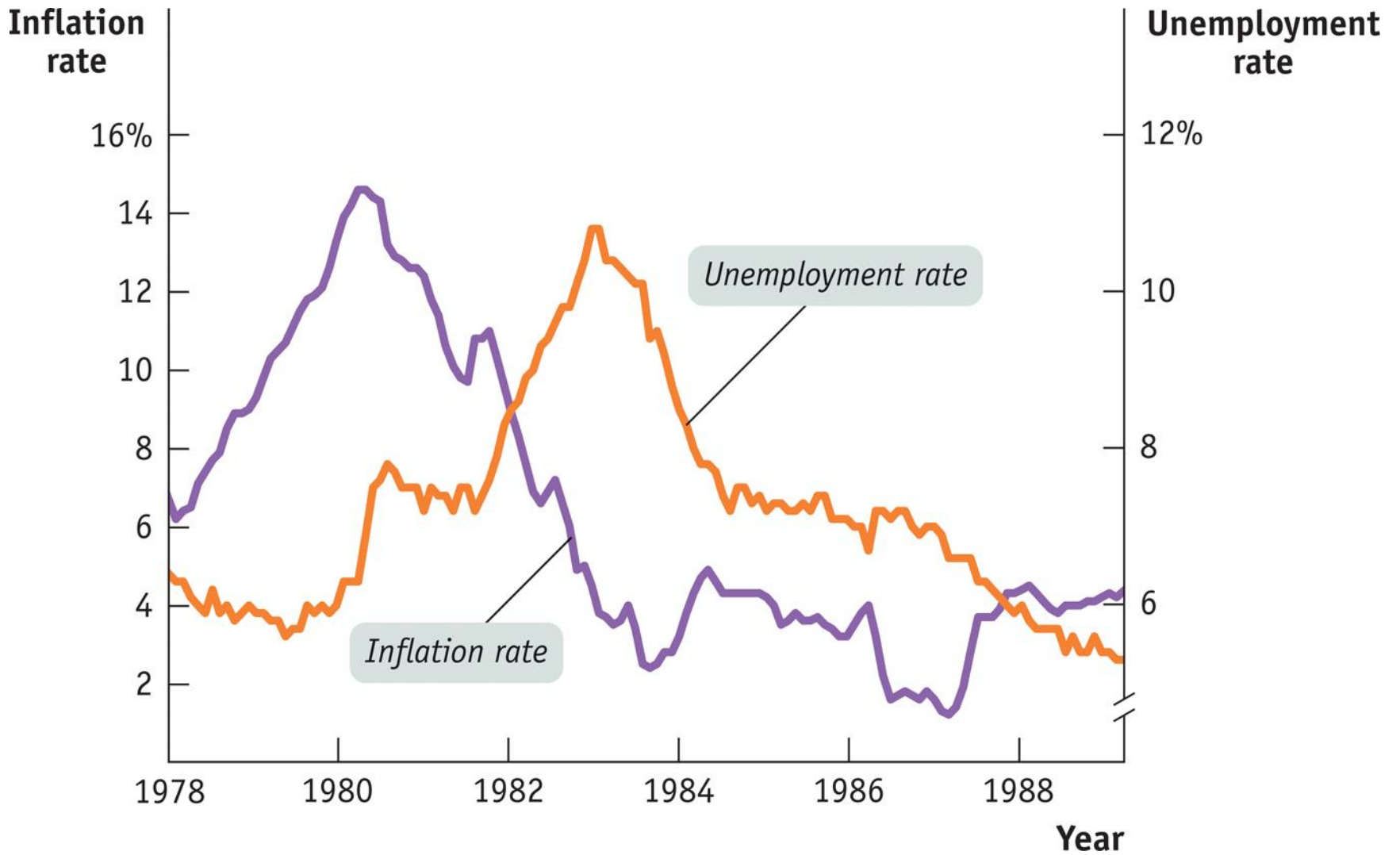
Nominal interest rate is 20%. Real interest rate was 5%

Example #2:

You lend out $100 with 10% interest. Prices are expected to increase 20%. In a year you get paid back $110.

What is the nominal and what is the real interest rate?

Nominal interest rate is 10%. Real rate was –10%

In reality, you get paid back an amount with less purchasing power.

Notice the "Stagflation Era" of the early 1980s.

How is Inflation measured? (Module 15)

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

- This "market basket" is made up of about 300 commonly purchased goods
- The Inflation Rate-% change in prices in 1 year
- Then 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% but only 1.5% in 2013
    - U.S. prices have increase 98.3% since 1982 (base year).

The most commonly used method to determine 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% between '97 & '09
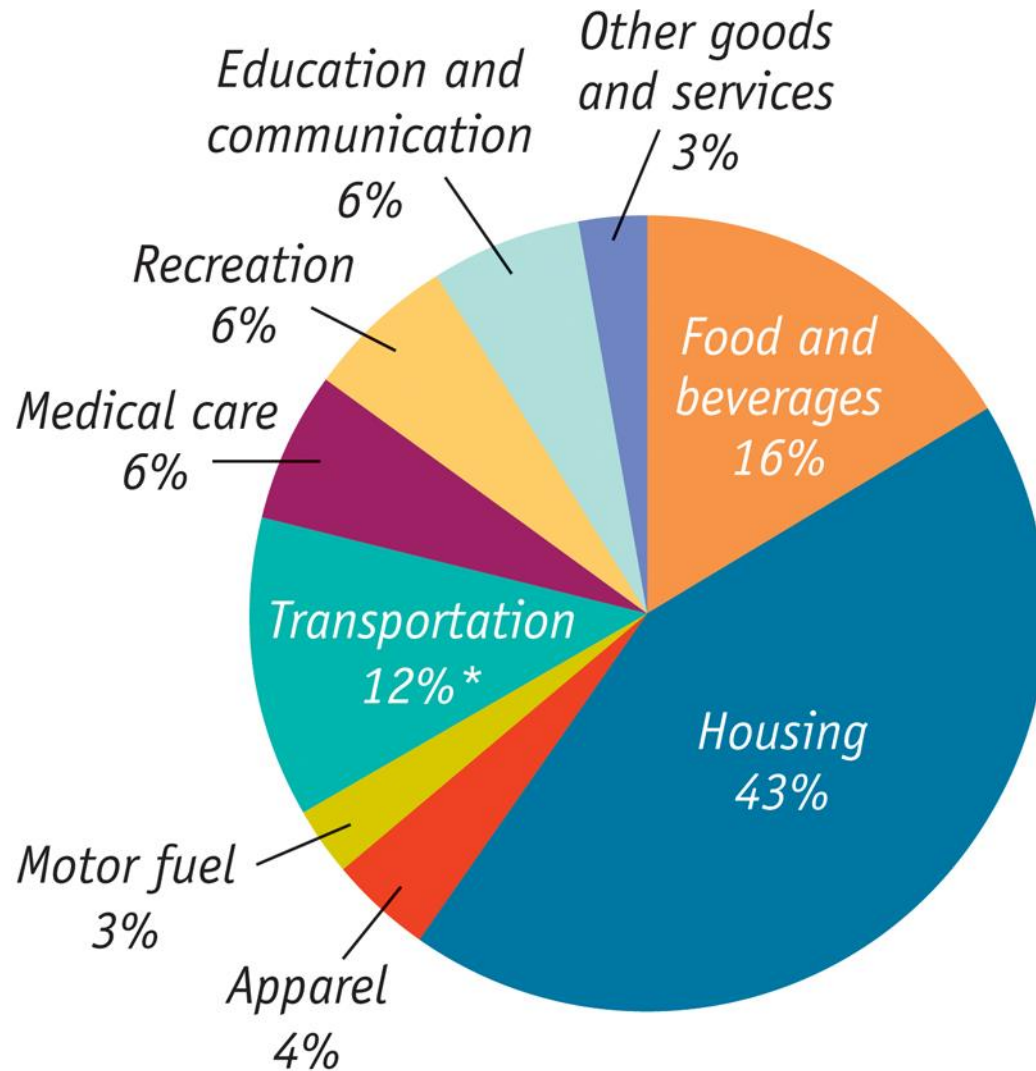- Items that cost $100 in '97 cost $125 in '09

US inflation

Q1 1978=100

- College tuition & fees
- Educational books & supplies
- House prices
- Consumer prices
- Average hourly wage

1,200

1,000

800

600

400

200

100

0

1978 80 82 84 86 88 90 92 94 96 98 2000 02 04 06 08 10
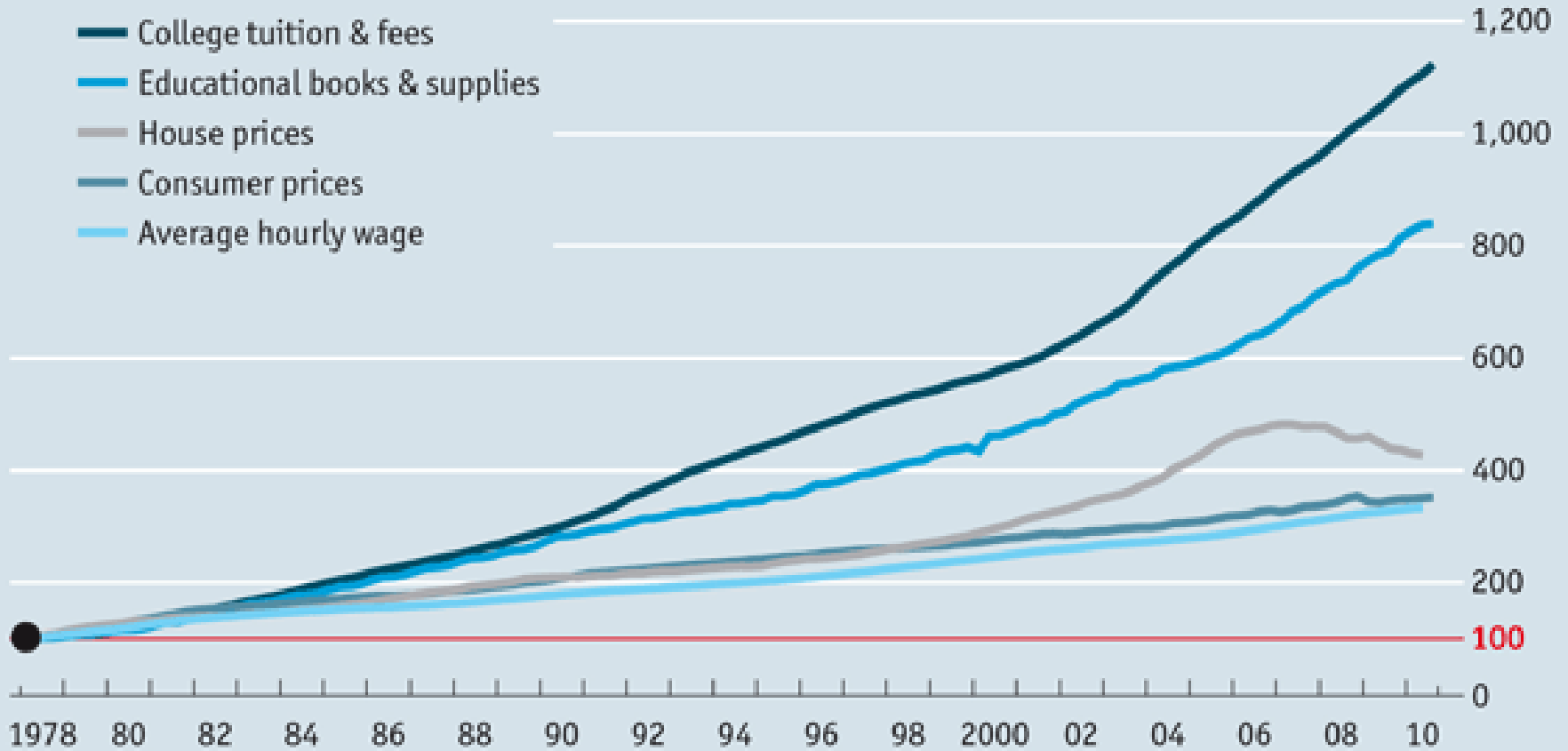
Sources: Bureau of Labour Statistics; FHFA; Thomson Reuters

The Market Basket of Goods used to compute the Consumer Price Index in 2008.

Problems with using CPI as a Measurement

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 economic well being has improved significantly)**

CPI vs. GDP Deflator

The GDP deflator measures the price of all goods produced, whereas the CPI measures prices of only the goods and services bought by consumers.

An increase in the price of goods bought by firms or the government will show up in the GDP deflator but not in the CPI.

The GDP deflator includes only those goods and services produced domestically.

$$\text{GDP Deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$
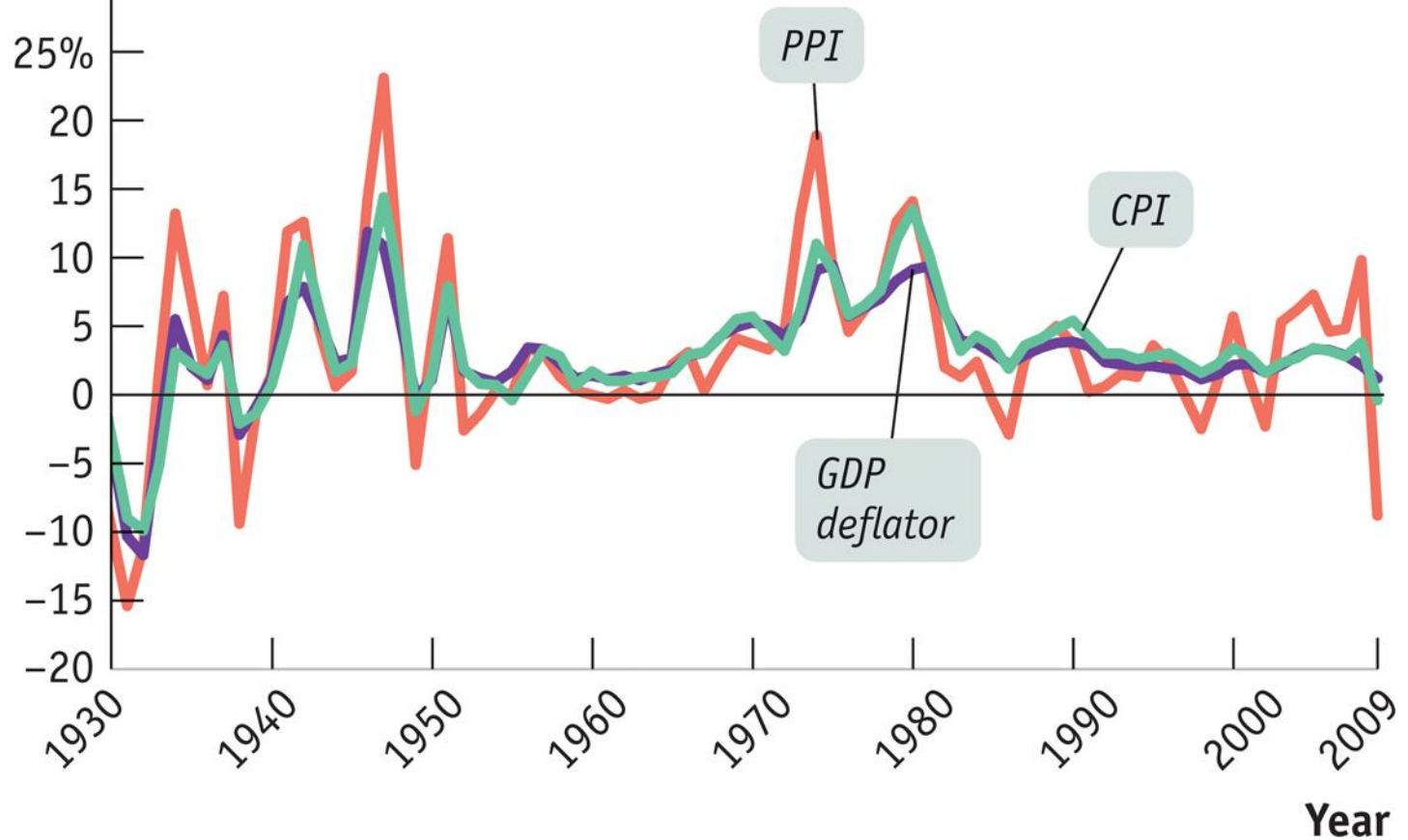
Sample Calculations

1. In an economy, Real GDP (base year = 1996) is $100 billion and the Nominal GDP is $150 billion. Calculate the GDP deflator.
2. In an economy, Real GDP (base year = 1996) is $125 billion and the Nominal GDP is $150 billion. Calculate the GDP deflator.
3. In an economy, Real GDP for year 2002 (base year = 1996) is $200 billion and the GDP deflator 2002 (base year = 1996) is 120. Calculate the Nominal GDP for 2002.
4. In an economy, Nominal GDP for year 2005 (base year = 1996) is $60 billion and the GDP deflator 2005 (base year = 1996) is 120. Calculate the Real GDP for 2005.

Sample Calculations

1. In an economy, Real GDP (base year = 1996) is $100 billion and the Nominal GDP is $150 billion. Calculate the GDP deflator. **(150)**

2. In an economy, Real GDP (base year = 1996) is $125 billion and the Nominal GDP is $150 billion. Calculate the GDP deflator. **(120)**

3. In an economy, Real GDP for year 2002 (base year = 1996) is $200 billion and the GDP deflator 2002 (base year = 1996) is 120. Calculate the Nominal GDP for 2002. **(240)**

4. In an economy, Nominal GDP for year 2005 (base year = 1996) is $60 billion and the GDP deflator 2005 (base year = 1996) is 120. Calculate the Real GDP for 2005. **(50)**

Percent change in the CPI, PPI, GDP deflator (y-axis). Year (x-axis). Chart showing PPI, CPI, and GDP deflator from 1930 to 2009.

There are 3 different ways to measure inflation & they tend to be close in calculations to each other. The most common measurement used is CPI

- Lower unemployment tends to lead to higher periods of inflation

- Higher inflation tends to lead to lower unemployment.

THESE RULES ARE USUALLY REPRESENTED BY A GRAPH KNOWN AS THE PHILLIPS CURVE

Inflation rate

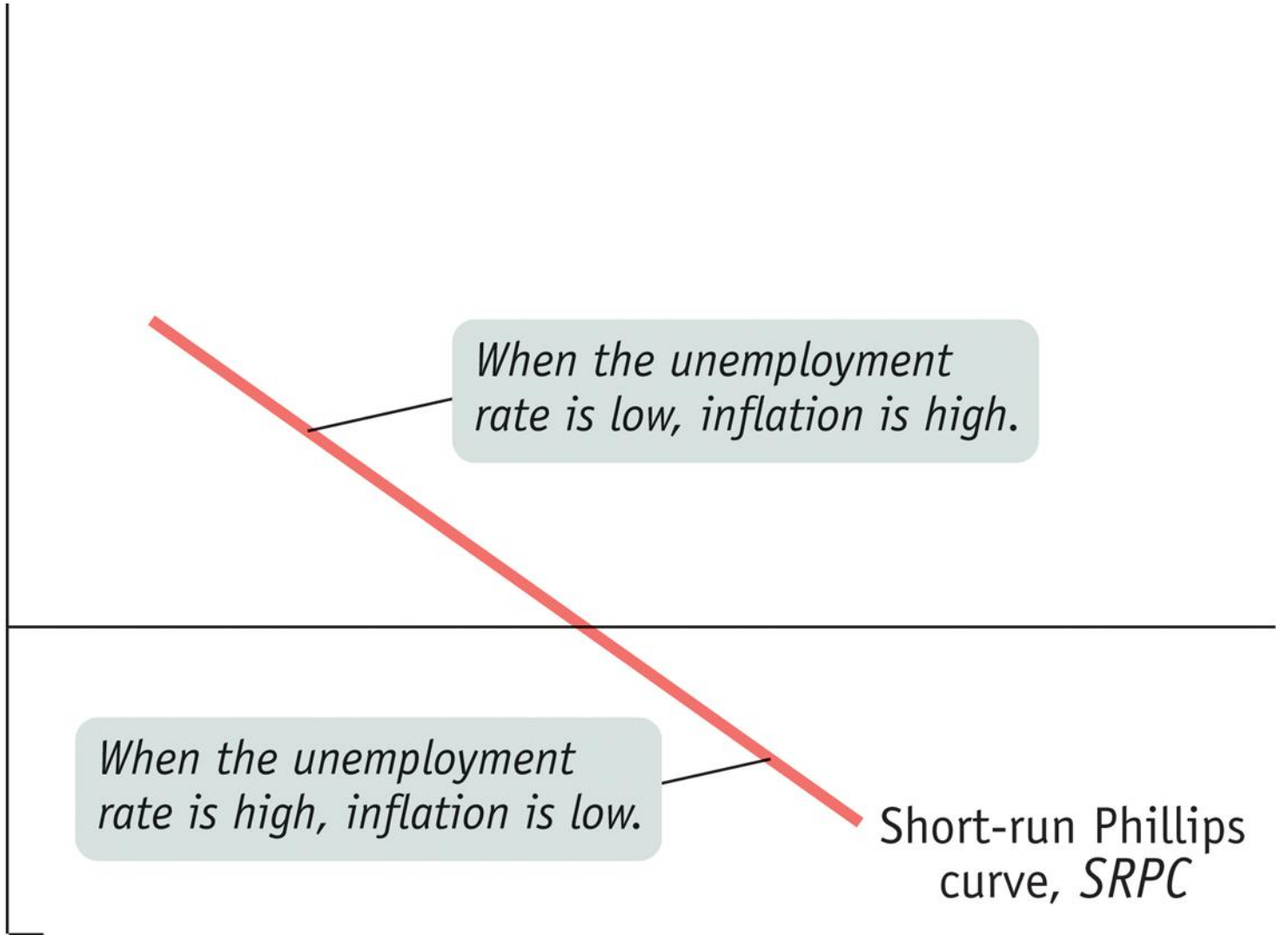When the unemployment rate is low, inflation is high.

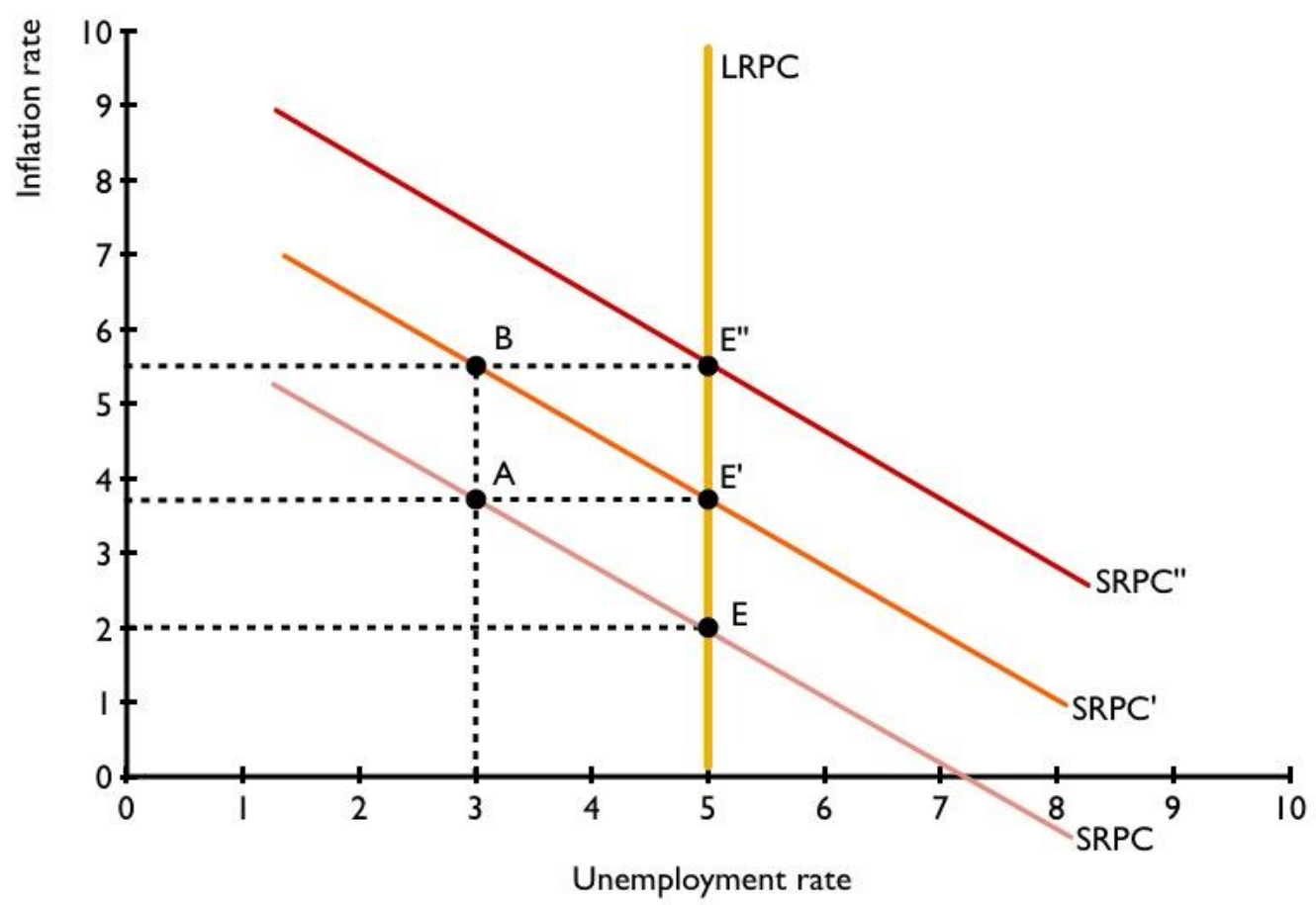When the unemployment rate is high, inflation is low.

Short-run Phillips curve, *SRPC*

0

Unemployment rate

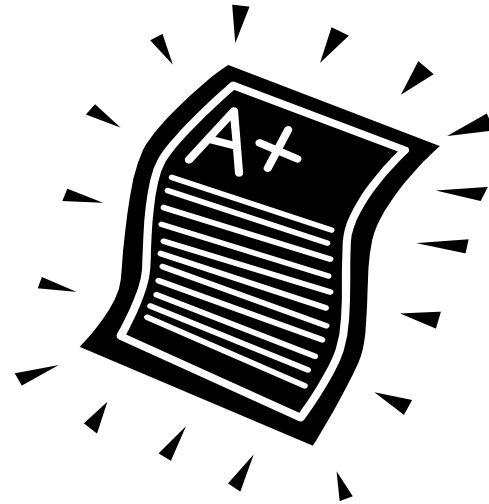The Short-Run Phillips Curve

LONG RUN PHILLIPS CURVE

The short run and long run effects of expansionary policies

So What Do You Actually Understand?

- Modules 10-15 Review Questions

OUTPUTS AND PRICES IN GALA LAND

This Year's Output	This Year's Price
400 loaves of bread	$6 per loaf
1,000 gallons of water	$2 per gallon
800 pieces of fruit	$2 per piece

Gala Land produces three final goods: bread, water, and fruit. The table above shows this year's output and price for each good.

(a) Calculate this year's nominal gross domestic product (GDP).

(b) Assume that in Gala Land the GDP deflator (GDP price index) is 100 in the base year and 150 this year. Calculate each of the following.

(i) The inflation rate, expressed as a percentage, between the base year and this year

(ii) This year's real GDP

(c) Since the base year, workers have received a 20 percent increase in their nominal wages. If workers face the same inflation that you calculated in part (b)(i), what has happened to their real wages? Explain.

(d) If the GDP deflator in Gala Land increases unexpectedly, would a borrower with a fixed-interest-rate loan be better off or worse off? Explain.

7 points $(1 + 2 + 2 + 2)$

(a) 1 point:
- One point is earned for calculating today's GDP = ($6 x 400) + ($2 x 1,000) + ($2 x 800) = $6,000.

(b) 2 points:
- One point is earned for stating that the inflation rate is 50 percent [(150-100)/100].
- One point is earned for calculating this year's real GDP = $6,000/1.5 = $4,000.

(c) 2 points:
- One point is earned for stating that real wages would fall.
- One point is earned for the explanation that the wages rose by only 20 percent as compared to the inflation rate of 50 percent, causing a 30 percent fall in real wages.

(d) 2 points:
- One point is earned for concluding that a borrower would be better off.
- One point is earned for the explanation that, due to the higher inflation, the borrower is paying back the loan using fewer real dollars.

Formulas to Remember for Unit 3

- GDP = C + I + G + Xn (exports – imports)
- Nominal GDP = P (price) x Q (quantity)
- Real GDP = P_y1 x Q_y2
- Change % GDP = $\dfrac{Y_2 - Y_1}{Y_1}$ x 100
- Unemployment = $\dfrac{\text{\# unemployed}}{\text{labor force}}$ x 100
- Inflation Rate % = $\dfrac{P_y2 - P_y1}{P_y1}$ x 100
- CPI = $\dfrac{\text{Price market basket}}{\text{Price basket base yr}}$ x 100
- GDP Deflator = $\dfrac{\text{Nominal GDP}}{\text{Real GDP}}$ x 100

51. GDP is:

A) the monetary value of all goods and services (final, intermediate, and non-market) produced in a given year.

B) total resource income less taxes, saving, and spending on exports.

C) the economic value of all economic resources used in the production of a year's output.

D) the market value of all final goods and services produced within a nation in a specific year.

52. GDP can be calculated by summing:

A) consumption, investment, government purchases, exports, and imports.

B) consumption, investment, government purchases, and imports.

C) investment, government purchases, consumption, and net exports.

D) consumption, investment, wages, and rents.

53. Net exports are negative when:
 A) a nation's imports exceed its exports.
 B) the economy's stock of capital goods is declining.
 C) depreciation exceeds domestic investment.
 D) a nation's exports exceed its imports.
 E) the government increases trade barriers

54. Historically, real GDP has increased less rapidly than nominal GDP because:
 A) price indices have not reflected improvements in product quality.
 B) the general prices have increased.
 C) technological progress has resulted in more efficient production.
 D) the general prices have declined.
 E) nominal GDP is adjusted for inflation

55. Which of the following best measures a nation's standard of living:
  A) unemployment rate.
  B) nominal GDP.
  C) total consumption and government spending
  D) real GDP per capita.
  E) inflation rate

56. The phase of the business cycle in which real GDP declines for at least 2 quarters is called:
  A) the peak.
  B) a recovery.
  C) a recession.
  D) the trough.
  E) a depression

57. Assuming the total population is 100 million, the civilian labor force is 50 million, and 47 million workers are employed, the unemployment rate:

   A) is 3 percent.
   B) is 6 percent.
   C) is 7 percent.
   D) is 9 percent.
   E) cannot be determined because we do not know how many workers are retired.

58. Which of the following is *correct*?

   A) The unemployment rates of men and women workers are roughly the same.
   B) Unemployment rates for black and white workers are approximately the same.
   C) Teenagers experience approximately the same unemployment rates as do adults.
   D) Laborers are less vulnerable to unemployment than are professional workers.

59. Kim quit her job as an insurance agent to return to school full-time to earn an MBA degree. She is now done with school and is searching for a position in management. Kim is:

A)   cyclically unemployed.   C) frictionally unemployed.

B)   structurally unemployed.   D) not in the labor force.

60. The presence of "discouraged workers":

A) increases the size of the labor force, but does not affect the unemployment rate.

B) reduces the size of the labor force, but does not affect the unemployment rate.

C) may cause the official unemployment rate to understate the amount of unemployment.

D) may cause the official unemployment rate to overstate the amount of unemployment.

Answers

51. D
52. C
53. A
54. B
55. D
56. C
57. B
58. A
59. C
60. C