UNIT 2: MEASURES OF ECONOMIC PERFORMANCE

Macro-economics is the study of the economy as a whole. How do we know if the economy is healthy??
THE 3 TOPICS OF UNIT 2: GDP, INFLATION AND UNEMPLOYMENT

Often includes inflation

Often includes unemployment
National Income and Product Accounts (aka national accounts) keep track of the spending of consumers, sales of producers, business investment, spending, government purchases, and other flows of money between different sectors.

Circular Flow Diagram/Model is an oversimplification of how money flows between goods and services and through different factor markets in the economy.

These are just the basics...there are literally buildings full of people who run around all day calculating the flow of money...we’re covering just the basics.

National accounts are sort of like an income statement for a business, or your banking statement for you...just a statement of what money came in, what money went out.
CIRCULAR FLOW

- Firms, Households
- Resource Market, Product Market
Would the government go on the Households or Firms side?
Does the government provide or consume resources and/or products?
BOTH! They consume and provide, so they typically go in the middle of the circular flow model.
GETTING STARTED IN UNIT 2: THE CIRCULAR FLOW MODEL

Households (resource owners)
Inflow: Income (rent, etc.)
Outflow: Payments for goods / services

Product market (goods and services)

Government
Inflow: Taxes
Outflow: Government spending

Financial institutions
Inflow: Saving
Outflow: Investment

International sector
Inflow: Imports
Outflow: Exports

Factor market (Resources: land, labor, capital, entrepreneurial skill)

Firms (producers)
Inflow: Revenue from selling goods / services
Outflow: Payments for resources

$ $ $
EXPANDED CIRCULAR FLOW MODEL
(ORGANIZED BY MARKETS NOT FIRMS/HOUSEHOLDS)
GROSS DOMESTIC PRODUCT

You can follow any ONE line on the circular flow to count GDP

GDP = Gross Domestic Product, generally accepted to be the measure of economic performance

GDP = the total market value of all FINAL GOODS AND SERVICES produced in an economy curing a given period (typically one year)

Intermediate goods – those that require further processing before they can be sold as a final good.

3 ways to count GDP

1. Add up the total value of all made FINAL goods and services – what we will use in AP Macro (Value of Production)

2. Add up aggregate spending on domestically produced final goods and services in the economy (Spending)

3. Add the total factor income earned by households from the firms/business in the economy (Income)
- **FINAL goods and services**: so the whole car, not the glass for the windows + the metal for the body + the tires + the value of the stereo, etc.

- Anything produced **INSIDE THE US** counts towards our GDP...if an apple iPhone is assembled completed in China, and that’s where it is FINISHED, than it counts toward China’s GDP, not ours, even if the factory is owned by an American company like Apple.
  - Conversely, if a foreign company, like Toyota, has a car factory here (which they do) and assemble final products that are sold here, then that counts toward OUR GDP.
  - If it is produced in America, it belongs to our GDP, even if it is consumed somewhere else.

- GDP also counts what was **PRODUCED** not what was **SOLD**.
  - Eg a car built in 2009 and sold in 2010 counts in the 2009 GDP

- All spending is broken into 4 categories...
VALUE ADDED IS IMPORTANT

Simply Adding Production

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th></th>
<th>February</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># Cappuccinos</td>
<td># Café lattes</td>
<td># Scones</td>
<td># Cappuccinos</td>
</tr>
<tr>
<td>October</td>
<td>25</td>
<td>25</td>
<td>50</td>
<td>30</td>
</tr>
</tbody>
</table>

Adding the Value of Production
To paint a more accurate picture of what that production was worth, we need to incorporate the value of these items.

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th></th>
<th>Prices</th>
<th>Value of Production</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cappuccinos</td>
<td>25</td>
<td>$3.00</td>
<td>$75</td>
<td></td>
</tr>
<tr>
<td>Café Lattes</td>
<td>25</td>
<td>$2.50</td>
<td>$62.50</td>
<td></td>
</tr>
<tr>
<td>Scones</td>
<td>50</td>
<td>$1.50</td>
<td>$75</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>100</td>
<td></td>
<td>$212.50</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>February</th>
<th></th>
<th>Prices</th>
<th>Value of Production</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cappuccinos</td>
<td>30</td>
<td>$3.00</td>
<td>$90</td>
<td></td>
</tr>
<tr>
<td>Café Lattes</td>
<td>30</td>
<td>$2.50</td>
<td>$75</td>
<td></td>
</tr>
<tr>
<td>Scones</td>
<td>40</td>
<td>$1.50</td>
<td>$60</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>100</td>
<td></td>
<td>$225</td>
<td></td>
</tr>
</tbody>
</table>

While both months had 100 units of production, we can see that February was a more impressive month because the total value of the production was higher. This difference would certainly have been noticed, and appreciated, by the owners of the coffee shop.

- **Final Goods**
GDP includes only final products and services; it avoids double or multiple counting, by eliminating any intermediate goods.
### INTERMEDIATE VS FINAL

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 lb of tomatoes from grower to producer</td>
<td>$.50</td>
</tr>
<tr>
<td>Bottle of ketchup from processor to HyVee</td>
<td>$1.5</td>
</tr>
<tr>
<td>HyVee sells ketchup to consumer</td>
<td>$3.</td>
</tr>
<tr>
<td><strong>Total $ Spent</strong></td>
<td>$5</td>
</tr>
</tbody>
</table>

How much of the money is counted toward the GDP??
How much money was spent on intermediate products?
EXPANDED CIRCULAR FLOW MODEL
(ORGANIZED BY MARKETS NOT FIRMS/HOUSEHOLDS)

GDP = C + I + G + Xn

C = Consumer spending

I = Investment

G = Government Spending

Xn – net exports (positive number if we have a favorable balance of trade)
Counts Durable and non-durable goods and services
- Eg: head of lettuce (non-durable)
- New washing machine = durable
- Pedicure = service

Consumption makes up about 2/3 of GDP
DOMESTIC INVESTMENT
AS PART OF THE GDP

- All final purchases of machinery, equipment, and tools by business
  - Eg: accounting firm buys a new copy machine
  - A manufacturer buys a new stamping machine

- Also includes all NEW construction (including residential)
  - Eg: building a new apartment building, house, or Lowes store

- Changes in business inventory
  - If total output exceeds current sales, unsold inventories build up – but it’s about production, not consumption
  - If business are able to sell more than they currently produce, this entry can be a negative number

- DOES NOT INCLUDE personal “investment” like stocks, bonds, etc. This is businesses investing in their companies.
GOVERNMENT PURCHASES AS PART OF THE GDP

- Includes spending by all levels of the government (federal, state, and local)
- Includes all direct purchases of resources (particularly labor)

Examples:
- Purchase of a heavy duty van from GM
- Employment of a nuclear physicist at Los Alamos
NET EXPORTS
AS PART OF THE GDP

- (X-IM)
- All spending on goods produced in the SU must be included in GDP whether the purchase is made here or abroad
- Often goods purchased in the US are produced somewhere else
- Therefore, net exports (X-IM) is the difference: (exports minus imports) and can be either a positive or negative number depending on which is the larger amount
WHAT IS NOT INCLUDED...

- Intermediate goods
- Second hand sales
  - Previously existing property, such as a house that was owned previously by someone else (if we counted that, we would have double counted the house)
- Purely financial transactions
  - Public transfer payments (Social Security, welfare benefits)
  - Private transfer payments, like an allowance or alimony payment
  - Sale of stocks and bonds represent a transfer of existing assets (Brokers fee is included in GDP as you are paying for their service)
ANOTHER WAY TO CALCULATE GDP WOULD BE THE INCOME APPROACH

- We won’t really use this, but you should be aware of it...
  - just like there were 4 categories of spending, there are 4 categories of buyers

- You could tally the incomes...

- National Income (NI) = Wages + Rents + Interest + Profits

- Should be equal to what is produced...this just looks at a different part of the Circular Flow Model...

- In theory: Spending = Income
INTERPRETING REAL GDP

Day 2
What is the difference between real and nominal GDP?
Why real GDP is the appropriate measure of real economic activity.
We spoke about the circular flow model and GDP...

Circular flow is the idea that business and households exchange with one another...households provide resources to business (and get paid for them) and then businesses provide goods and services (and get paid for them)

GDP = Consumer spending + Investment + government spending + net exports

But...also 2 others:
- Above is the expenditure (spending) approach
- Could also use the income approach (add up incomes for each category)
- Could also use the production approach (value added...you add up EVERYTHING and then deduct intermediate goods)
GDP is often used to measure a country’s success... but GDP will increase as prices increase since GDP is the total value of all final goods and services produced in a given year.

REAL GDP adjusts nominal GDP by using prices at a fixed point in time; this point in time is called the base year.

Suppose you want to adjust nominal GDP in 2009 to real GDP so that you can compare real economic activity to 2008, your base year. You would use 2008 prices and 2009 output levels to compare real GDP in 2009 to 2008 dollars.
<table>
<thead>
<tr>
<th>Year</th>
<th>GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>$2,862.5</td>
</tr>
<tr>
<td>1981</td>
<td>$3,210.9</td>
</tr>
<tr>
<td>1982</td>
<td>$3,345.0</td>
</tr>
<tr>
<td>1983</td>
<td>$3,638.1</td>
</tr>
<tr>
<td>1984</td>
<td>$4,040.7</td>
</tr>
<tr>
<td>2010</td>
<td>$14,964.4</td>
</tr>
<tr>
<td>2011</td>
<td>$15,517.9</td>
</tr>
<tr>
<td>2012</td>
<td>$16,163.2</td>
</tr>
<tr>
<td>2013</td>
<td>$16,768.1</td>
</tr>
</tbody>
</table>

Has the US economy quadrupled since 1980?

Nominal GDP can be misleading...from this table, it would be possible that production remained the same for each of these year, and price was the only thing that changed.

To correct this, we need to find a way to calculate REAL GDP, which uses the value of current production but the fixed prices from another time.

The point where we ‘freeze’ the prices is referred to as the ‘base year’
Real GDP: A measure of aggregate output

When you hear a report about GDP, you are hearing the value of current production at the current prices.

Using 2009 production with 2009 prices is the NOMINAL GDP
- This is also known as current-dollar GDP or “money” GDP

We use GDP to gauge the size of the macroeconomy because it does value the total output of final goods and services for a period of time.

The measure is often compared across nations. If the GDP in the us is twice the size of the GDP in of another country, we often say that our economy is twice as big.

As we will see, this can be misleading.
H ow to calculate real GDP

<table>
<thead>
<tr>
<th>Year</th>
<th>Tons of Wheat</th>
<th>Price per Ton</th>
<th>Tons of Soybeans</th>
<th>Price per Ton</th>
<th>Nominal GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>100</td>
<td>$100</td>
<td>80</td>
<td>$50</td>
<td>$(100*$100) + (80*$50) = $14,000</td>
</tr>
<tr>
<td>2008</td>
<td>110</td>
<td>$110</td>
<td>80</td>
<td>$100</td>
<td>$(110*$110) + (80*$100) = $20,000</td>
</tr>
</tbody>
</table>

You try...

See how much of page 9 you can complete (sorry real vs nominal is on there twice...but its not bad practice)

Do you think this economy grew 43.6%!!?? NO!!

To calculate REAL GDP we used 2007 prices with 2008 Productivity levels

When we do that, we find the economy grew only about 7%
The economy of a Kentuckiana produces three goods: Widgets, Gizmos, and Thingamagigs. The accompanying table shows the output and prices for the years 2006 and 2007.

<table>
<thead>
<tr>
<th>Year</th>
<th>Widgets</th>
<th>Gizmos</th>
<th>Thingamagigs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Price</td>
<td>Quantity</td>
<td>Price</td>
</tr>
<tr>
<td>2006</td>
<td>$100</td>
<td>1</td>
<td>$10</td>
</tr>
<tr>
<td>2007</td>
<td>$110</td>
<td>1</td>
<td>$11</td>
</tr>
</tbody>
</table>

- Calculate the nominal GDP for:
  1. 2006
  2. 2007

- Compute the percentage change in nominal GDP from 2006 to 2007 (% change = Year 2 – year 1 / year 1)

- Using 2006 as the base year, calculate the real GDP for 2007

- Compute the percentage change in real GDP from 2006 to 2007

2006 = $200
2007 = $240
% change in nominal = 20%
Real 2007 = $225
Real % change = 12.5%
GDP is just a statistical measure, but often in the world market, we use it to determine a country’s success...

GDP DOES NOT INCLUDE:

- Taking time off from work to coach your kid’s soccer team. Volunteerism detracts from GDP
- Any forms of leisure take away from GDP, reading, exercising, playing catch with your friends/family
- Working around your house, taking care of your things and your family. If you decide to drop out of the labor force and be a stay at home to take care of your kids, you may be hurting the GDP bc you aren’t earning an income to then use to on spending.

Not everything we spend money on makes us happy

- Bars to put on your windows because you live in an unsafe neighborhood.
- Buying assault riffles
- Cleaning up after a natural disaster adds to GDP
- Spending money to fight preventable diseases (COPD) adds to GDP

Videos: Bobby Kennedy’s GDP Speech, We Economics GDP Smack down
GDP Per Capita = GDP/population

GDP vs. GNP/GNI – uses ownership as the measure...so where GDP says an American owned company in S. Korea wouldn’t count, GNP/GNI would count it

GDP is not a measure of income or of a standards of living indicator...but it is very often used that way

<table>
<thead>
<tr>
<th>Rank</th>
<th>GDP as a whole</th>
<th>GDP per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>United States</td>
<td>Qatar</td>
</tr>
<tr>
<td>2</td>
<td>China</td>
<td>Luxembourg</td>
</tr>
<tr>
<td>3</td>
<td>Japan</td>
<td>Singapore</td>
</tr>
<tr>
<td>4</td>
<td>Germany</td>
<td>Brunei</td>
</tr>
<tr>
<td>5</td>
<td>France</td>
<td>Kuwait</td>
</tr>
<tr>
<td>6</td>
<td>United Kingdom</td>
<td>Norway</td>
</tr>
<tr>
<td>7</td>
<td>Brazil</td>
<td>United Arab Emirates</td>
</tr>
<tr>
<td>8</td>
<td>Italy</td>
<td>San Marino</td>
</tr>
<tr>
<td>9</td>
<td>Russia</td>
<td>Switzerland</td>
</tr>
<tr>
<td>10</td>
<td>Canada</td>
<td>United States</td>
</tr>
</tbody>
</table>
UNEMPLOYMENT

Day 3

Three different types of unemployment and their causes

The factors that determine the natural rate of unemployment
Unemployment rate = the percentage of the total number of people in the labor force who are unemployed

Unemployed = people who are actively looking for work but aren’t currently employed

Jobs are incredibly important. In 2008 when the major economic recession hit, voters’ number one concern became jobs and the economy over the wars on terror, helping to elect Barack Obama to office as the 44th president.
Employment is easy to define = you have a job 😊

Unemployment is much more difficult...

Are you ‘unemployed’ if you are retired? Or a stay at home mom? Or a full time college student? If you are incarcerated?

US Census Bureau says you are unemployed if you are, “jobless, looking for jobs, and available for work”

So, in order to be unemployed, you have to be currently looking for work.
SO THEN WHO IS IN THE LABOR FORCE?

Those who ARE working

Those who are looking for work

The labor force participation rate is the percentage of the working age population that is IN the labor force of the entire population.
### WHO IS/IS NOT IN THE LABOR FORCE?

<table>
<thead>
<tr>
<th>POPULATION</th>
<th>IN the labor force</th>
<th>OUT of the labor force</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employed</strong></td>
<td>Currently holds a full- or part-time job</td>
<td>Children</td>
</tr>
<tr>
<td>Includes those who are underemployed</td>
<td>Retired</td>
<td></td>
</tr>
<tr>
<td><strong>Unemployed</strong></td>
<td>Not working but actively seeking work</td>
<td>Full-time student (not working)</td>
</tr>
<tr>
<td>Frictional</td>
<td>Choose not to work</td>
<td></td>
</tr>
<tr>
<td>Cyclical</td>
<td>Not actively seeking work</td>
<td></td>
</tr>
<tr>
<td>Structural</td>
<td>Stay-at-home parent</td>
<td></td>
</tr>
<tr>
<td>Discouraged workers</td>
<td>Institutionalized</td>
<td></td>
</tr>
</tbody>
</table>

(Under 16) Non working individual who is capable of working but has given up looking for a job because of the current market – in the past 4 weeks

Our next focus: 3 types of unemployment

Working part time, wanting full time

Working part time, wanting full time
Because it does not include discouraged workers, or marginally attached workers (people who would like a job but aren’t looking for one) sometimes the unemployment rate looks better than it really is.

It also includes unemployed workers...these people might not be making enough to cover their living costs, etc.

Conversely, there will always be some unemployment (more on that later) so even in the peak of an expansionary period, there will be as much as 4% unemployment

All that said, Kansas currently seems to be in great shape...
UNEMPLOYMENT RATES ALSO VARY BY GROUPS
Labor is reported monthly by the Bureau of Labor Statistics.

Total unemployed, plus all marginally attached workers plus total employed part time for economic reasons (U6RATE)


Unemployment Rates for States
Monthly Rankings Seasonally Adjusted
Dec. 2014

<table>
<thead>
<tr>
<th>Rank</th>
<th>State</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NORTH DAKOTA</td>
<td>2.8</td>
</tr>
<tr>
<td>2</td>
<td>NEBRASKA</td>
<td>2.9</td>
</tr>
<tr>
<td>3</td>
<td>SOUTH DAKOTA</td>
<td>3.3</td>
</tr>
<tr>
<td>4</td>
<td>UTAH</td>
<td>3.5</td>
</tr>
<tr>
<td>5</td>
<td>MINNESOTA</td>
<td>3.6</td>
</tr>
<tr>
<td>6</td>
<td>IDAHO</td>
<td>3.7</td>
</tr>
<tr>
<td>7</td>
<td>COLORADO</td>
<td>4.0</td>
</tr>
<tr>
<td>7</td>
<td>HAWAII</td>
<td>4.0</td>
</tr>
<tr>
<td>7</td>
<td>NEW HAMPSHIRE</td>
<td>4.0</td>
</tr>
<tr>
<td>10</td>
<td>IOWA</td>
<td>4.1</td>
</tr>
<tr>
<td>11</td>
<td>KANSAS</td>
<td>4.2</td>
</tr>
<tr>
<td>11</td>
<td>MONTANA</td>
<td>4.2</td>
</tr>
<tr>
<td>11</td>
<td>OKLAHOMA</td>
<td>4.2</td>
</tr>
<tr>
<td>11</td>
<td>VERMONT</td>
<td>4.2</td>
</tr>
<tr>
<td>11</td>
<td>WYOMING</td>
<td>4.2</td>
</tr>
<tr>
<td>16</td>
<td>TEXAS</td>
<td>4.6</td>
</tr>
<tr>
<td>17</td>
<td>OHIO</td>
<td>4.8</td>
</tr>
<tr>
<td>17</td>
<td>PENNSYLVANIA</td>
<td>4.8</td>
</tr>
<tr>
<td>17</td>
<td>VIRGINIA</td>
<td>4.8</td>
</tr>
</tbody>
</table>
UNEMPLOYMENT POST 2008

- https://www.youtube.com/watch?v=mKajVjasp84 (2012)
### Civilian Population

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilian Population</td>
<td>236,832</td>
</tr>
<tr>
<td>Employed</td>
<td>138,333</td>
</tr>
<tr>
<td>Unemployed</td>
<td>14,837</td>
</tr>
<tr>
<td>Total Civilian Labor Force</td>
<td>153,170</td>
</tr>
<tr>
<td>Not in the labor force</td>
<td>83,663</td>
</tr>
<tr>
<td>Discouraged Workers (subset of those not in labor force)</td>
<td>1,065</td>
</tr>
</tbody>
</table>

\[
\text{LFPR} = 64.7\%
\]
\[
\text{UR} = 9.7\%
\]
\[
\text{UR with discouraged workers} = 10.3\%
\]

Complete page 17 in Activity Packet
Day 4

Know the three types of unemployment and their causes

Know factors that determine natural rate of employment
There is still a level of unemployment even when jobs are plentiful. Even in the best of times, jobs are constantly being created and destroyed.

Let’s explore why looking at the types of unemployment...

Take Corbin Park...or Bluhawk...

- Has/will it create jobs?
- Has/will it destroy jobs?
  - If it did destroy jobs – does that make sense? If these properties are developing, isn’t that a sign of economic growth?
Frictional unemployment = people moving from one job to another

- Considered the most desirable of the types of unemployment.
- Perhaps they quit because they are now more qualified for another position.
- They lost a job due to destruction but are waiting to find a job that matches their skill level.
- Perhaps you just graduated from college and are looking for the ‘right job’ in a city in which you want to be.

Frictional employment is inevitable because people will always be entering the job market or losing their jobs due to growth in other areas...and we want them to find job for which they are fit because that leads to better productivity and efficiency.
Structural Unemployment is when there are more people seeking work than are available at the time. Maybe overall or perhaps in a specific category/area/skill/trade/area.

This can also be due to a technological change...perhaps your job has been replaced by a machine.

Structural unemployment happens when there is excess labor or, for some reason, the wage rate is above that of equilibrium wage rate:

- Airline mergers put airline workers out of work
- Foreign competition causes US companies to downsize
- Military cutbacks led to displacement of workers in military-related fields/industries

Whenever we have excess supply of labor you are above equilibrium.
Most recently in the news, fast food workers were on strike to try and increase their minimum wage.

But what if the minimum wage was forced on the company?

A minimum wage could lead to a surplus of workers because there are more of them (or they are willing to work more hours) than companies are willing and able to pay?
Unions often negotiate for higher wages...often they recognize that may mean fewer workers.
Business may choose to pay a wage higher than the minimum wage as an incentive for their workers to deliver better performance. The efficiency wage creates a surplus of workers, it has created structural unemployment.
SIDE EFFECTS OF PUBLIC POLICY

- By providing government aid for those who are unemployed, some workers may not feel the need to find a new job as quickly. By keeping more people searching for another job for longer, the benefits increase structural and frictional unemployment.

- Most economically advanced nations are willing to help these families so they are not financially ruined in the event of a recession.
NRU is the idea that even if the economy is in its best shape, there will always be some unemployment, and that low unemployment isn’t always an indicator of economic failure...

Structural unemployment often implies of growth in new/different areas, advancement of technology, etc. At low levels is ‘good’

Frictional unemployment often means people are holding out for jobs for which they are qualified, feeling safe enough in the current market to wait for the ‘right job’

NRU can change, but slowly over time. NRU in 1950 was 5/3%
NRU in 1970s was 6.3%. Fallen to about 4.8% today (3-5% considered ok)
This is due to population growth/decline/age, technology (like the ability to search online for jobs), and lesser influence of unions than in 1950-60s
Happens when the overall demand for goods and services cannot support full employment – people want less

The one type of unemployment that is really never considered ‘good’

Usually the difference between the actual rate and the ‘natural rate’ of unemployment

Often happens in a recession, when people don’t have the willingness or ability to demand as many goods.
1. How are measure of the economy (so far we have discussed GDP and inflation) used to make an argument?

2. What does the article credit for the improving market?

3. Using the discussion of incomes, can you guess what a ‘sticky’ wage might be?

4. Why would the Federal Reserve Bank be optimistic?
Economic costs of inflation

Inflation winners and losers

Why do we try and stabilize inflation?

Difference between real and nominal values of income, wages, and interest rates

Problems of deflation/disinflation
What happened in your Learning Prep #4?

In which case was inflation detrimental?

In the scenario, how do real wages and real incomes’ value change because of inflation?

How did inflation change your *purchasing power*?

To calculate the rate of change:

\[
\text{Inflation rate} = \frac{\text{price level in year 2} - \text{price level in year 1}}{\text{price level in year 1}} \times 100
\]

Inflation rate – the percentage change per year in a price index (typically the consumer price index)

- ‘Healthy’ rates are considered to be 2-3% (really anything under 3%
# TYPES OF INFLATION COSTS

<table>
<thead>
<tr>
<th>Type</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shoe Leather Costs</strong></td>
<td>The increased costs of transactions caused by inflation. Perhaps you spend more on gas driving around looking for a sale. You go out of your way to get something you know is cheaper somewhere else, figuratively, wearing our your shoes.</td>
</tr>
<tr>
<td><strong>Menu Costs</strong></td>
<td>Are the real costs of changing listed prices. Not necessarily on a ‘menu’ but any list of goods for sale anywhere, prices, in stores, etc. Changes in price tags, UPS, etc. So this is the time and money spent on literally changing all of those prices (ink, paper, labor, etc)</td>
</tr>
<tr>
<td><strong>Unit – of – account cost</strong></td>
<td>Happens because inflation makes money a less reliable unit of measurement. Dollars have a very specific role in budgeting, planning, ‘in kind’ use. The argument here is that families may make less efficient use of their dollars because the dollars are worth less now than they once were...budgets aren’t always as productive.</td>
</tr>
</tbody>
</table>
Not everyone is hurt by inflation! For many, inflation is very helpful!

**Interest rates** – on loans are the percentage of the loan amount that the borrower must pay to the lender, typically on an annual basis, in addition to the repayment of the loan amount itself. This is significant when you compare nominal to real interest rates.

- Nominal interest rate is the interest rate that is actually paid for a loan, unadjusted for inflation.
- Real interest rate is the nominal interest rate adjusted for inflation. This adjustment is achieved by simply subtracting the interest rate from the nominal interest rate...

Eg: if a loan carries a nominal interest rate of 8% but the inflation rate is 5%, the real interest rate is only 3%
Typically, for winner/loser problems, you should assume that inflation is occurring, unless you are told otherwise...

Sometimes in US history, deflation has happened which switches things around a bit...for example, home mortgages taken on high interest, high inflationary times.

For winner and loser/who is helped or hurt by inflation, what you are looking at is who is having to spend LESS because of inflation or who is making LESS than they would want due to inflation.

APUSH connection: William Jennings Bryan in his Cross of Gold speech was actually asking for an inflationary policy by abandoning the gold standard as this would help borrowers who tended to support him.
According to the ‘answer key’
1. H
2. G
3. U
4. H
5. H
6. U
7. U
8. U
9. G
10. H
11. U
12. H
13. G
14. H
15. U
Deflation – prices going down

There is no real evidence suggestion inflation rates between 3-5% really hurt the economy...but:

Traditionally, government intervenes pretty heavily when inflation creeps beyond our comfortable 2-3% rate

Why? Because once it gets past that 5% limit, it gets really hard to push it back down.

The process of trying to bring the inflation rate back down is called disinflation

What is the pattern here? Why would the government want to step in at higher rates of inflation?
INFLATION PART 2

Measuring inflation...

Measure inflation rate

Understand/know importance of a price index

Know: GDP Deflation, CPI, and PPI
We use a *market basket* – a hypothetical set of consumer purchases of goods and services (meant to represent an aggregate price level).

What economists essentially want to know is a general average of the prices of goods from year to year...they are trying to find what they call a *price index*.

For example: if there is a drought in FL and it increases the cost of citrus fruits...do we really need to know the details (oranges up by 20 cents, lemons up 20 cents, or do we just want the overall percent of change? *First market basket in 1919*
The Consumer Price Index is an aggregate of almost 80,000 goods and services that a typical urban family of 4 would consume.

- This is the most widely used measure of price inflation

Gathered by the Bureau of Labor Statistics

- Full of many sub-indices

When the Consumer Price Index rises, overall prices have increases – which is inflation. So we use the CPI to measure the amount/rate of inflation.

https://www.youtube.com/watch?v=vtx3UAEm300
A Price Index measures the cost of purchasing a given market basket in a given year. The index value is normalized so that it is equal to 100 in the selected base year.

Example:
Let’s go back to our citrus fruit example: Here are prices of fruits before and after a major freeze:

Market Basket in Base year = $95 and in the next year (given year) = $175

Price index = $175/$95 x 100
Price index = 184.2

Why do we norm to 100? By using 100 as an index, we put the two numbers in relative terms. This way, you don’t have to know or remember what the price index was of the original year...you just say it is 100...then you can compare it to the 184.2
HOW WE USE CPI TO CALCULATE THE RATE OF INFLATION

Inflation rate

\[
\text{Inflation rate} = \frac{\text{Price index in year 2} - \text{price index in year 1}}{\text{Price index in year 1}} \times 100
\]

Just a rate of change formula using price indices
Producer Price Index (PPI) measures the changes in prices of goods and service purchased by producers.

The PPI is used to know what a market basket of raw commodities would be (such as steel, electricity, goal, oil, so on)

If you are given a producer price index, the calculation would be the same for it as it would be for the CPI...they are both price indexes derived from market baskets.
The GDP is NOT a price index, but often it is used that way. 

Because it is a sum of all produced goods and services, it may work as a quasi market basket.

The GDP DEFLATOR is a formula extract inflation from a nominal GDP to use base year ‘dollars’
You would use the GDP deflator...but what if you have a price index instead?

Real GDP = Nominal GDP / Price Index/100

GDP Growth = (GDP in year 2 – GDP from year 1) X 100
            GDP year 1

This is the same formula as percent change, we just call it growth because the GDP is a measure of the overall economy’s ‘growth’ or overall output.
LAST STEP: REAL WAGES

- To calculate real wages:
  - To determine the real wage, simply divide wage by price level
  - Real wage = \( \frac{\text{nominal wage in given year}}{\text{price index in given year}} \times 100 \)
USING FORMULAS: PAGE 13, 15, 16
7 points $(3 + 3 + 1)$

(a) 3 points:
- One point is earned for stating yes for Mexican consumers.
- One point is earned for stating no for Mexican manufacturers.
- One point is earned for the explanation that reducing tariffs will cause the domestic price of automobiles to fall in Mexico, lowering the production of cars in Mexico.

(b) 3 points:
- One point is earned for indicating that the current account will move toward a deficit.
- One point is earned for the explanation that the reduction in tariff increases imports relative to exports.
- One point is earned for stating that the capital account will move toward a surplus.

(c) 1 point:
- One point is earned for concluding that aggregate demand will decrease.
Part (a) Gross domestic product (GDP) can be calculated by summing the expenditures on final goods and services or by summing factor payments plus economic profit, the income approach. Summing value added for each final good produced will also measure GDP.

Part (b) The expenditure and income approach to calculating GDP will yield identical results. For any good, the total revenues minus total costs will equal economic profit. So, as an accounting identity, total revenues--the expenditure approach--will equal total factor costs (including those for intermediate goods) plus economic profits--the income approach. In other words, all expenditures on goods and services will constitute an identical flow of income and profit for producers.

Part (c) Official GDP statistics do not provide a complete accounting of economic activity. The statistics will not include the value of underground or illegal economic activities, household work and production, or bartered goods. Also, the impact of externalities, both negative and positive, are not captured by official GDP statistics.

Part (d) In order to assess the impact on the typical person of a 4 percent increase in nominal GDP, certain additional pieces of information are needed. These include the rate of inflation, the rate of population growth, the change in the distribution of income, the change in leisure time enjoyed by the typical worker, the change in the impact of externalities not included in the GDP calculation, and the change in product quality.

**Scoring Rubric**

Part (a) = 1 Point, Part (b) = 1 Point, Part (c) = 1 point, Part (d) = 2 Points; 5 Points in Total
STUDY FOR YOUR TEST ON FRIDAY!!

- If you find yourself confused over some of the different concepts, watch the corresponding video on our website.
- Email me with questions.
- Familiarize yourself with the models of this unit (these are listed on your packets).
- Go through the key concepts in your packet, check off the ones you know, circle and look up the ones you don’t.
- Be sure you know the various formulas and calculations of this unit.

Learning is fun!

Study habits...