2017-02-06

The Three Goals of Any Economy

1. Promote economic growth
    - Provide more jobs for more people
2. Limit unemployment
    - Unemployment limits growth by inhibiting production and decreasing consumer spending
3. Limitm inflation
    - High inflation discourages long-term investment

How Do We Check Up On the Economy?

- Economists love them some statistics on production, income, investment, and savings
    - **National income accounting** = a method of economic analysis that looks at the overall health of an economy by analysing certain figures
- **Gross Domestic Product(GDP)** = the market value of all final goods and services produced *domestically* annually
    - Only accounts for **final goods**
        * **Final goods** = the end-result of production/labor
            · This prevents GDP from being inflated by counting each step in production as its own good
    - Formula for calculating *change*

$$\% = \frac{GDP_f - GDP_i}{GDP_i} \times 100$$

    - GDP is just a metric of total domestic production
        * This leads us to believe that larger countries are "better" than smaller production
            · To avoid that misconception, we use GDP-per-capita

$$GDP_{per-capita} = \frac{GDP}{population}$$

            · According to the almighty authority on economis, GDP-per-capita is the *best* indicator of standard of living

Why Do Certain Nations Have Higher GDP's?

- The ultimate authority says: **productivity**
  - **Economic system** = capitalism is inherently superior to your inferior commie system
  - **Property rights** = because the factors of production are privately owned, we are all somehow more efficient
    - *Don't ask why.*
  - **Capital**
    - **Capital stock** = esentially just a synonym for physical capital
    - **Human capital** = knowledge, skills, education, etc
  - **Natural resources** = oil af

What Doesn't GDP Measure?

- GDP doesn't account for
  - Intermediate goods
  - Non-productive transactions
    - *e.g.*
      - Stock market purchases
      - Used goods
  - Illegally traded goods

2017-02-07

Calculating GDP

- There are generally two methods
  1. **Expenditures approach** = sum up all expenses that qualify for GDP
  2. **Income approach** = sum up all incocme that qualifies for GDPa
- Ideally *both* of these approaches should be roughly equal

Four Parts of GDP

1. Consumer spending(~70%)
    - Essentially just private individuals using income to purchase and consume goods and servicecs
2. Investment(~15%)
    - NOTE: this is **not** stock market purchases or bonds, as those do not qualify for domestic production
    - Rather, investment is when businesses invest capital back into the economy
        - Examples
            * Loans
            * Self-driving cars
3. Government spending(20%)
    - **NOT** transfer payments
    - Rather, things like schools and military equiptment
4. Net exports
    - Formula is essentially just

$$\Sigma X = X - M$$

    - where X is exports and M is imports

2017-02-08

Income Appraoch to Calculating GDP

- The model essentially boils down to 4 **factor payments**
    1. Labor income = essentially just the wages individuals earn
    2. Rental income = the income generated by owning something and renting it out
    3. Interest income = the income generated by interest on loans
    4. Profit = the income generated by exploiting the working class

Nominal GDP vs Real GDP

- **Inflation** = a rise in costs
- **Nominal GDP** = non-inflation adjusted GDP
  - For example, the nominal GDP-per-capita of the United States in 1970 was 5,246.96 USD-1970
- **Real GDP** = inflation-adjusted GDP
  - This is what's actually used to make comparisons in purchasing power between periods

Business Cycle

- **Business cycle** = a model of the economy that relates real GDP with time
  - The curve has an overall increasing trend line
    - However, the economy goes through periods of boom and bust
    - Visually, the curve snakes around an "ideal" line of full employment
      - Periods of time where the curve is above the line is **inflation**
      - Periods of time where the curve is below the line is **unemployment**
  - **Recession** = a period of decline in real GDP that lasts for 6 months
    - If significantly longer, it is a **depression**

2017-02-09

Unemployment

- **Unemployment rate** = the ratio of the able-bodied population that is looking for a job but hasn't gotten hired yet

$$\%_{Unemployed} = \frac{Q_{unemployed}}{Q_{laborforce}} * 100$$

- where $Q_{unemployed}$ is the number of unemployed persons in an economy and $Q_{laborforce}$ is the number of persons that are in the **labor force**
  - **Labor force** = the part of the population that is considered as employed or potentially employable

    * Must be above 16 years old
    * Able and willing to work
    * Not institutionalized
        · *i.e.* prison, mental hospitals, etc
    * Not serving in military, a full-time student, or retired

Three Types of Unemployment

1. **Frictional unemployment** = a type of unemployment characterized by apt workers that are between jobs or temporarily unemployed
    - **Seasonal unemployment** = a type of **frictional unemployment** characterized by working periods being *seasonal*
        – *e.g.* a Santa clause impersonator
2. **Structural Unemployment** = a type of unemployment characterized by the skills of the labor force becoming obselete
    - Especially relevant *now*, as automation changes the economic landscape
    - **Creative destruction** = a term that describes the process of these kinds of jobs disappearing
    - **Technological unemployment** = a specific type of **structural unemployment** driven by automation
3. **Cyclical unemployment** = a type of unemployment that is caused by the effects of a recession
    - Due to recssions, consumer demand decreases across the board, and companies respond with a reduced demand for labor
        – Cyclical unemployment is also called "demand deficient unemployment"

Natural Rate of Unemployment

- **Natural Rate of Unemployment(NRU)** = the rate of unemployment that is deemed "normal" for an economy not in recession
    – Based on frictional and structural unemployment
- **Full employment output(Y)** = the real GDP generated if an economy does not experience cyclical unemployment
    – So, "full employment" is really just an "acceptable" unemployment calculated with frictional and structural unemployment rates
        * For the United States, "full employment" is at ~5% unemployment

---

2017-02-10

Shortcomings of Unemployment Metrics

- The **unemployment rate** does not consider **discouraged workers**
  - Thus, people that get exhausted and burnt out with looking for a job ultimately aren't captured in this metric
    - As such, the unemployment rate can drop just by an increase in discouraged workers
- **Underemployed worker(part-time worker)** = a worker that wants to work *more*, but cannot find that employment
- Inequality
  - Employment descrimination is technically illegal, but it still happens
  - Basis varies
    - Race
    - Age
    - Sex

2017-02-13

What is "Inflation"?

- **Inflation** = a general rise in the price of goods
  - In effect, inflation reduces the **purchasing power** of consumers
  - Each unit of currency is worth less in physical goods
- **Disenflation** = a lowering in the rate at which inflation happens
  - NOT a reversal, just a slowing down
- **Nominal wage** = a wage that *isn't* adjusted for inflation
- **Real wage** = a wage that is adjusted for inflation

How Do We Measure It?

- **Inflation rate** = the rate at which prices rise from year to year

$$\%_I = \frac{P_f - P_i}{P_i}$$

- The government keeps tabs on the fluctuations of costs for certain **market baskets**
  - **Market basket** = a collection of goods that is used to track inflation over time
- **Consumer Price Index(CPI)** = a metric of inflation that relies on this market basket approach
  - Essentially, CPI is just the inflation rate for a very specific collection of goods whose prices are thought to be related

Is it Good or Bad?

- Generally, economists see rampant inflation as *bad*
  - Because it discourages investment because of the volitility of the dollar
- However, some economists believe that short-term inflation can be beneficial to the economy
  - Especially if the economy is in a severe recession
- What about **deflation**?
  - **Deflation** = a general decrease in the price of goods
    - Can be very bad because resources are hoarded, inhibiting growth

---

2017-02-14

Example of Calculating Some Values

- Assume year 1 is base year

Year	Units of Output	Price	Nominal GDP	Real GDP	CPI
1	10	$4	$40	$40	100
2	10	$5	$50	$40	125
3	15	$6	$90	$60	150
4	20	$8	$160	$80	200
5	25	$4	$100	$100	100

CPI vs GDP Deflator

- **GDP deflator** = a metric of of price changes of *all* goods produced
- **CPI** = a metric of price changes for a very specific market basket
- In general, if prices for inputs changes, that will be reflected in GDP deflator
  - So, CPI is an *incomplete* story

2017-02-15

Problems With CPI

1. **Substitution Bias** = the demand for two substitute goods might shift, and the CPI will only test *one* of them
   - As a result, it looks like prices went up or down, but really they just shifted to a different good
2. **New products** = new market baskets need to be constantly created
3. **Product quality** = CPI only accounts for *price* change
   - If price change, CPI assumes that the product is the *same*, even if the product is better or higher quality
     - CPI is blind to improvements, so increases in CPI can be deceiving

Three Causes of Inflation

1. Change in the **quantity** of currency
   - If the government prints more currency, each individual dollar becomes less valuable
   - Called the **quantity theory**
     - **Velocity** = the average number of times a piece of currency changes hands

       $$MV = PY$$

     - where M is **money supply**, V is **velocity**, P is **price level**, and Y is **quantity of output**
       * We tend to assume that **velocity** is constant
   - **Hyperinflation** = a situation that can arise when a government prints new money to pay off debts
     - As a result, banks do not lend, halting growth

    - Examples
        * Bolivia
        * Peru
        * Brazil
        * Germany post WW1

2. **Demand-Pull Inflation**
    - Essentially, just an overall increase in demand
        - The demand curve shifts, resulting in a new **equillibrium price**

3. **Cost-Push Inflation**
    - Essentially, an increase in input costs
        - Suppliers have to raise prices to skim off the same profit margin
        - **Negative supply shock** = some kind of event that causes a sudden decrease in supply of some input
            * *e.g.* oil spill