

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. Limit 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 economics, 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** = essentially 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
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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 income 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 services
 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 equipment
 4. Net exports
 - Formula is essentially just
$$\Sigma X = X - M$$
 - where X is exports and M is imports
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2017-02-08

Income Approach 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**
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Unemployment

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

$$\%Unemployed = \frac{Q_{unemployed}}{Q_{labor\ force}} * 100$$

- where $Q_{unemployed}$ is the number of unemployed persons in an economy and $Q_{labor\ force}$ 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 obsolete
 - 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 recessions, 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

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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
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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 volatility 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 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