CFC16 Maiden Lane: Case Study Glossary

The Federal Reserve System

Interactive Fed history and information: http://www.frbsf.org/education/teacher-resources/what-is-the-fed
A History of Central Banking in the U.S.: https://www.minneapolisfed.org/community/student-resources/central-bank-history/history-of-central-banking
The American Currency Exhibit: http://www.frbsf.org/education/teacher-resources/american-currency-exhibit

Gross Domestic Product (GDP)

Gross Domestic Product is the market value of all goods and services produced within an country in a given time period. GDP measures the value of what the economy is making, and it also is a way of thinking about the income that the economy is created, because every purchase becomes income for the person selling the good.

GDP is important for many reasons, but the basic one is that it gives a measure of how the overall economy is doing, and thus how people in the economy are doing.

When you look at variables like GDP, it is usually best to consider *real* values, not *nominal* values. Nominal values are the current market value of things. Real values hold prices constant. For example, suppose that the economy produces cars, and each car costs $20,000 this year, and next year, the price rises to $30,000. Suppose that actual production of cars does not change. Nominal GDP would go up because prices are higher, but nothing *real* would have changed. Real GDP, which is measured using constant prices, would stay the same, which accurately represents what happened to output.

For more information:

GDP data: http://www.bea.gov/national/index.htm#gdp
How to calculate real and nominal values, and more about GDP:
http://useconomy.about.com/od/grossdomesticproduct/p/Real-GDP.htm

Potential Real GDP (or potential output)

Potential real GDP is the level of GDP that can be sustained in the long run. Sometimes this idea is called "full employment output." As discussed below in the employment section, full employment does not mean that every worker is working. It means that there is a level of unemployment that does not cause inflation to rise or fall. Likewise, there is a usual amount of use of capital—machines and factories and other physical capital—in the economy.

The economy can produce below capacity, and it can also produce above capacity for short periods of time. But producing above capacity for long usually causes wages and prices to rise. The difference between potential GDP and actual GDP is called the **output gap**, which could be either positive (the economy is producing above capacity) or negative (the economy is producing below capacity).

Potential GDP is determined by the factors of production that an economy has—labor, physical capital, human capital, natural resources, and entrepreneurship—and the technology that is available. Changes in any one of these factors will change the level of output that the economy is able to produce.

For more information:
How the Congressional Budget Office calculates potential output:
https://www.cbo.gov/publication/13250?index=3020&zzz=13730
Real and Potential GDP, from the Atlanta Fed (Video): https://www.frbatlanta.org/about/fed-explained/2012/gdp.aspx

The Components of GDP (C+I+G+NX)

Consumption is everything that consumers buy *except* houses, because houses are more like investment (see below). There are three part to consumption: **durable goods** (things that will last some time, like household appliances and cars); **nondurable goods** (things that are consumed in one use or quickly, like food), and **services**. Economists tend to be more interested in what is happening to durable goods than the other parts, because they are a better measure of how consumers are doing. If times are hard, you have to eat, but you don't have to buy a new car.

In the United States, consumption accounts for about 2/3 of GDP, so it is very important.

Investment is purchases of capital goods by businesses and consumers. It is important not to confuse investment the way that economists use it with *financial investment*, which is purchases of stocks and bonds. The way in which economists use the term investment is to refer to the purchases of assets that provide value over time, like a house or a machine used in the production of cars, or a factory. Investment is important because it determines the **capital stock** of a country, that is, the assets that a country has to produce things with. Thus it is important both in terms of GDP now and what the country's ability is to produce things in the future, long-run growth.

There are three parts to investment: **residential investment** (consumer purchases of houses), **nonresidential investment** (business purchases of factories and equipment and technology), and **inventories**. Inventories are the good produced by firms that are not sold in the period that we're counting. Inventories are not really investment in the same sense as the other parts of this category, but it is necessary to count the production of those unsold goods in some part of GDP.

Government spending is spending by federal, state, and local governments.

Net exports is exports of goods and services minus imports of goods and services. For the U.S., net exports is usually a negative number, because we usually buy more goods and services from other countries than they buy from us.

Inflation

Inflation is the rate of increase (percentage change) in overall prices in the economy. If the annual rate of inflation is 5%, then on average, all prices will rise by 5% over the year.
Disinflation is a lower but still positive rate of inflation.
Deflation is the rate of decrease (percentage change) in overall prices in the economy.

For more information:
Types, causes, and measuring inflation: http://useconomy.about.com/od/pricing/f/Inflation.htm
A fun inflation calculator: http://www.usinflationcalculator.com/
The Fed Explains Inflation (Video): https://www.frbatlanta.org/about/fed-explained/2012/inflation.aspx

PCE deflator (PCE)

The PCE deflator is the Fed's preferred measure of inflation. Its full name is the Personal Consumption Expenditures Price Index (PCEPI), but it is usually just referred to as the PCE deflator, or, often, just the PCE. When the Fed talks about a 2% target for inflation, it means 2% growth in the core CPI.

The PCE deflator comes from changes in prices of the goods and services in Personal Consumption Expenditures, the "C" in C + I + G + NX. It measures the average change in the price of goods and services that consumers actually buy.

One problem with measuring inflation is that some prices, especially the price of food and of energy products like oil and natural gas, usually move around a lot more than other prices. If we use those prices to calculate inflation, it may look like it is changing a lot more than it really is. Thus it is usual to look at two measures, **topline** or **headline** inflation, which includes food and energy (and everything else), and **core** inflation, which takes out those things.

For more information:
PCE deflator data, showing types of products included:
http://www.bea.gov/iTable/iTable.cfm?reqid=9&step=3&isuri=1&903=69#reqid=9&step=3&isuri=1&903=69

Consumer Price Index (CPI)

The Consumer Price Index is one common way of measuring overall prices in the economy. Changes in the CPI are used to calculate the rate of inflation. Although it is not the measure that the Fed prefers, you may have heard more about it.

The Consumer Price Index is based on a "market basket" of goods that a typical family buys. The cost of that basket is calculated in the original, or "base" year, and then the things in the basket stay the same while prices change. For example, if the basket of goods cost $50 in the base year and $75 the next year, the CPI in the second year would be 75/50, which is 1.50. This number is usually multiplied by 100 for convenience, so you would say that the CPI in the second year was 150. The rate of inflation is the percentage change in prices between years, (150-100)/100 = .50, or 50%... a very high rate of inflation!

Because the CPI is based on a fixed market basket of goods, it is thought to overstate the actual rate of inflation (and that's one reason why the Fed prefers the PCE deflator). For example, if the price of eggs rises, you will probably not buy the same amount of eggs. You will *substitute* a less expensive option, and thus your cost of living will not rise as much as the CPI (which thinks that you haven't changed your egg purchases) would calculate.

As with the PCE deflator, there are **headline** and **core** measures of the PCE deflator. **Topline** or **headline** inflation includes food and energy (and everything else); and **core** inflation takes out those things.

For more information:
CPI data: http://www.bls.gov/cpi/
CPI inflation calculator: http://data.bls.gov/cgi-bin/cpicalc.pl
More about the CPI: http://useconomy.about.com/od/economicindicators/p/CPI.htm
Differences between the CPI and the PCE deflator:

A good article on the difference in measures: http://www.wsj.com/articles/cpi-vs-pce-untangling-the-alphabet-soup-of-inflation-gauges-1426867398
An article from the BLS on differences: http://www.bls.gov/opub/btn/archive/differences-between-the-consumer-price-index-and-the-personal-consumption-expenditures-price-index-pdf.pdf

Inflationary Expectations are what consumers and businesses think that inflation is going to be in the future. This is very important, because if you are a worker, and you think that inflation is going to be higher, then you will ask for more wage increases. In turn, firms will raise prices more. And so what people expect about inflation gets "built in" to what the inflation rate is, and it is often hard to change expectations.

The Fed likes inflation expectations to be stable. When they are, the Fed often calls them "well-anchored", like a boat that is safely in a harbor. Thus when they talk about expectations changing significantly, they often use another nautical term and say that expectations have come "unmoored", not anchored.

It is hard to measure inflationary expectations. Can you say exactly what you think that the inflation rate will be next year? We measure consumer expectations through thing's like the University of Michigan **Consumer Sentiment** survey. There are other ways to measure business expectations.

For more information:
The Fed's survey of consumer expectations: http://www.newyorkfed.org/microeconomics/sce/
Another way of measuring expectations, the TIPS spread:
http://bonds.about.com/od/governmentandagencybonds/a/How-To-Use-Tips-To-Calculate-Inflation-Expectations.htm

Consumer Confidence
Some of the same surveys that tell us about inflationary expectations also tell us about consumer confidence, how consumers are feeling about the future, particularly about the labor market, their own spending plans, and the economy in general. Since we know that consumption is about 2/3 of economic activity in the U.S., what consumers choose to do is very important. For example, consumers who are pessimistic about the future are not likely to choose to buy new cars!

For more information:
Some reasons why consumer confidence is important:
http://stocks.about.com/od/marketnews/a/ConsumIn122804.htm

Unemployment

The Unemployment Rate

The unemployment rate is the number of people who are in the labor force (that is, they are over 16, not in the military, and not in prison or a hospital) who are *actively seeking work* but are not employed right now, divided by the total number of people in the labor force.

The unemployment rate is never zero, because there will always be some unemployment. In particular, there is always **frictional** unemployment and **structural** unemployment. Frictional unemployment is when people have quit their jobs voluntarily or who have just entered the labor force. They will have jobs soon, but they are between jobs right now. Structural unemployment occurs when the skills that workers have do not match the

skills that employers need. This happens because some industries are always declining and some industries are always expanding, and the expanding industries may not be in the right place or need the same skills as the declining industries. The sum of frictional and structural unemployment is called **the natural rate of unemployment**.

The Fed is concerned when the rate of unemployment is not close to the natural rate. If unemployment is greater than the natural rate, there is **cyclical** unemployment, usually because the economy is in a **recession**, a period of negative economic growth.

The Fed would also be concerned if the rate of unemployment was below the natural rate. This means that workers are scarce, and that will tend to mean that wages rise. While that is good for the workers in the short run, it can lead to inflation, because increases in wages usually mean that the prices of all goods will rise eventually.

There are many ways of defining the unemployment rate. The usual definition, in the first paragraph above, is technically called the U-3 rate. However, that rate may not give a complete picture of the actual number of people who would like a job, or a better job, and can't find one. Some workers with jobs may be working part time because they cannot find a full time job. They are not unemployed, but we would say that they are **underemployed.** Also, there may be workers who would like a job but have given up searching because they think that they cannot find a job. These are **discouraged workers**. The U-6 rate of unemployment includes these types of workers, too, and gives a different picture of the amount of unemployment.

For more information:

Unemployment and other labor market data: http://www.bls.gov/
The Fed Explains the Unemployment Rate (Video): https://www.frbatlanta.org/about/fed-explained/2012/unemployment.aspx

Payroll Employment

Another way of looking at the labor market is to see how many jobs are created each month. This data is called Payroll Employment. Every month, the labor force expands by about 150,000 workers. That is, every month some workers leave the labor force to retire or for other reasons, and some workers enter the labor force, either new workers or workers returning. That nets out to about 150,000, so for the unemployment rate to go down, the economy must create more than 150,000 jobs per month.

For more information:

Why does the Fed think that Payroll Employment is Important?
http://www.frbsf.org/education/publications/doctor-econ/2004/june/nonfarm-jobs-payroll-employment

The Labor Force Participation Rate

Related to the unemployment rate is the labor force participation rate. This is the total labor force divided by the total population (that is over 16, not in the military, and not in prison or a hospital). Changes in the labor force participation rate are important for a number of reasons. First, the portion of the population that participates in the labor force has an effect on the nation's productive capacity, and thus affects both current GDP and potential GDP. Secondly, decreases (or increases) in the participation rate can be related to business cycles. For example, during recessions, workers may drop out of the labor force entirely. Third, the participation rate may change as a result of demographic changes in the population, such as an aging

population, different ethnic composition of the population, or a higher percentage of students going on to higher education.

For more information:

A thorough article from the Cleveland Fed on long-term trends in U.S. labor force participation: https://www.stlouisfed.org/publications/regional-economist/october-2013/a-closer-look-at-the-decline-in-the-labor-force-participation-rate

Wages

Wages are, of course, the amount that workers are paid. Wages are important in the economy, in a number of ways. First, they represent a large share of the national income of the United States. Income turns into buying power, and thus increases in wages may result in increased consumer buying power, increasing consumption and the demand for goods and services. Secondly, they are a cost to businesses, and thus increases in wages can ultimately result in increases in prices of final goods and services, and thus inflation. Third, they can act as an indicator of how close the labor market is to full employment. As the market approaches full employment, or *tightens*, wages may rise as labor becomes relatively more scarce.

As with all economic data, it is important to distinguish between **real** and **nominal** changes in wages. For example, if nominal wages rise by 2% and overall inflation rises by the same amount, there is no increase in the purchasing power of workers. If the rates of inflation exceeds the rate of wage growth, buying power is falling.

There are many measures of wages available. For this case, the measure used is **average hourly earnings**. Average hourly earnings is a nominal measure and are calculated using data on earnings from all types of workers. To find real wage growth, you need to find the rate of growth of wages and divide that by the inflation rate.

For more information:

Federal Reserve Bank of Atlanta's wage growth tracker: https://www.frbatlanta.org/chcs/wage-growth-tracker.aspx?panel=1

Interest Rates

An interest rate is the cost of borrowing and lending. Consumers and businesses and the government take out loans for a number of different purposes, so when analysts talk about "the interest rate", they really mean the representative interest rate in some particular market. Some common interest rates are:

The federal funds rate (the rate at which financial institutions borrow and lend in the overnight market, explained below)
The Treasury bill rate (the interest rate on the shortest term government securities)
The prime rate (the rate at which banks lend to their best customers)
The mortgage rate (the rate at which banks will lend for housing loans)

An important distinction when talking about interest rates is **nominal interest rates** versus **real interest rates**.

Nominal interest rates are the actual rates charged for various types of loans.
The **real interest rate** is the nominal interest rate minus the inflation rate. That is, it is the actual return that the lender receives (or borrower pays) for a loan after adjusting for inflation. For example, if the nominal rate was 8% but inflation was 5%, the lender is really receiving 3% interest on the loan. In

recent years, nominal rates have been very close to zero for short-term loans, and thus real interest rates have been negative.

The Housing Sector

Housing purchases are part of the residential investment component of GDP, which is a subcategory of investment. Thus when housing purchases fall, investment may fall.

Most homebuyers take out a loan called a mortgage to purchase a house. Since houses are expensive, usually the loan is for many years (conventionally 15 or 30 years). Since these loans are so long term, the interest rate is very important. A small change in the interest rate can be the difference between being able to afford to buy a house or not. Thus even small changes in mortgage rates can cause large changes in housing demand and thus in investment.

One way of looking at the "health" of the housing market is to consider an index of housing prices. Usually home prices rise over time as the population grows and income rise. Falling prices or a reduction in the rate at which prices usually rise can be an indicator of weak demand, which in turn could have a number of causes, including higher interest rates or slow income growth.

Monetary Policy and the Economy

The ways in which monetary policy affects the economy are called the monetary transmission mechanism. The primary channel is called the interest rate channel.

The interest rate channel works like this: when interest rates fall, businesses and consumers are more willing to take out loans (or to spend money that they already have), because money is "cheaper." That is, the amount that you have to pay to borrow money (the interest rate) is lower. When businesses and consumers take out more loans, they then spend money on goods and services, increasing demand, which in turn increases output.

The Fed influences interest rates by setting a target for the federal funds rate, which is the rate that banks charge each other for very short-term loans. If the actual fed funds rate is equal to the target, the Fed doesn't have to do anything. But suppose that the market rate is too high. Then the Fed must increase the money supply. When there is more money, its "price", the interest rate, falls.

The way that the Fed increases the money supply in this case is called open market operations (OMO). This is purchases and sales of government bills, notes, and bonds on the open market (that is, to or from banks or other economic agents, rather than directly from the government). If, for example, the Fed buys bonds from banks, an **expansionary open market operation**, banks have more money, and thus are willing to lend it at a lower rate. By adjusting the money supply, the Fed can adjust the interest rate until it is the desired level, which in turn helps GDP reach the desired level.

For more information:

The Fed Chairman Game: http://sffed-education.org/chairman/

About the FOMC: http://www.philadelphiafed.org/education/teachers/resources/day-in-life-of-fomc/