Aggregate Demand & Aggregate Supply

(slope of the aggregate supply (AS) curve)

aggregate supply (AS) - The total quantity of goods and services that firms are willing to supply at varying price levels.

The AS curve should be thought of as having three distinct though related sections that are defined by the number of people unemployed.

1. very high unemployment
2. "normal" unemployment
3. very low unemployment

In our AD-AS model we will be graphing real GDP on the horizontal axis. When real GDP (output -- the stuff produced in our economy) goes up, unemployment will go down because, ceteris paribus, it takes more people to produce a higher GDP. Similarly, if real GDP falls, unemployment will go up because, ceteris paribus, it takes fewer people to produce a lower GDP.

The basic relationship is illustrated on the graph below. As production increases in the economy, unemployment falls.

This relationship between the rate of unemployment and real GDP defines the slope of the aggregate supply (AS) curve. With high unemployment, AS is horizontal because workers are available to increase GDP. The laborers will work without an increase in the wage rate (they are unemployed and happy for the opportunity the work). Therefore prices do
not increase. As output increases, the price level does not rise and the AS curve is horizontal.

As more and more people are employed, unemployed workers no longer are willing to work without wage increases. In order to find the employees firms need, the firms must offer higher wages. These wage increase surface as price increases. Therefore AS begins to show a positive slope. This range of the AS curve is associated with the "normal employment" region.

As the economy continues to expand and more and more people are employed, unemployment will fall. At some point a physical limit on the amount the economy can produce will be reached. When this point is reached, AS becomes vertical. Real GDP can no longer increase. Only price increases are possible.

The "normal" unemployment range generates the part of the AS curve we will be using in the class for our analysis.
Slope of the aggregate demand (AD) curve

Aggregate demand (AD) - the total quantity of goods and services demanded by households, firms, foreigners, and government at varying price levels.

The aggregate demand (AD) curve has a negative slope, just like the familiar demand curve from microeconomics. However, the negative slope of AD is caused by entirely different reasons than the micro demand curve. There are essentially three reasons why the AD curve has a negative slope:

1. The real wealth effect
2. The interest rate effect, and
3. The international trade effect.

The real wealth effect

As the price level goes up, the real value of money falls. Inflation causes each individual dollar to be worth less. Each dollar buys less real goods and services. Therefore people consume less. Of course less consumption means a smaller quantity of real GDP. The real wealth effect is part of the reason why AD slopes downward.

The interest rate effect

As the price level goes up, people will be forced to borrow more to maintain the same standard of living, ceteris paribus. The increased borrowing will drive up interest rates making it more difficult to borrow.
The higher interest rates mean, *ceteris paribus*, real GDP will fall. The interest rate effect is part of the reason why AD slopes downward.

*the international trade effect*

As the price level goes up - people will buy more abroad (imports) and less at home. The smaller purchases at home mean, *ceteris paribus*, a lower domestic GDP. The international trade effect is part of the reason why AD slopes downward.

Taken together, these three reasons explain why the AD curve has a negative slope.

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**macroeconomic equilibrium**

Macroeconomic equilibrium -- The level of real GDP and the price level that equate the aggregate quantity demanded and the aggregate quantity supplied

There exists a specific price level where the quantity of real GDP supplied is equated with the quantity of real GDP demanded. The price level defines equilibrium real GDP. Once again, the graph "looks" much like the microeconomic graph, but the economics underlying the picture are very much different.
**distinguish between a movement along and a shift in AD and AS**

As with the microeconomic supply and demand model, it is very important to distinguish between a shift in the AD or AS curves and a movement along the curves.

**shift in the AS curve**

The AS curve will shift anytime the price of a resource changes. Because wages comprise approximately 70% of total costs, changes in wages are the primary reason the AS curve shifts.

If wages decrease, the AS curve will "increase" evidenced by a rightward shift.
If wages increase, the AS curve will "decrease" evidenced by a leftward shift.

Movement along the AS curve will occur when the price level changes. This change in price level occurs when the AD curve shifts.

If there is an increase in AD (rightward shift in the AD curve), point "A" will move up the AS curve.
If there is a decrease in AD (leftward shift in the AD curve), point "A" will move down the AS curve.

Some factors that can cause a shift in AD ...

- government spending
- taxes
- the size of the money supply - through changes in interest rates
- foreign exchange rates
- income abroad
- expectations

If government spending increases, taxes decrease, the money supply increases, the Federal Reserve decreases interest rates, or any factor that would expand the economy changes, the AD will increase (shift to the right).
If government spending decreases, taxes increase, the money supply decreases, the Federal Reserve increases interest rates, or any factor that would contract the economy changes, the AD will decrease (shift to the left).

Notes:

**movement along the AD curve**

Movement along the AD curve will occur when the price level changes. This change in price level occurs when the AS curve shifts.

If there is a decrease in AS (leftward shift in the AS curve), point "A" will move up the AD curve.
If there is an increase in AS (rightward shift in the AS curve), point "A" will move down the AD curve.

**preliminary analysis using the AD-AS model**

**OPEC induced supply shock**

In the mid-1970s the Organization of Petroleum Exporting Countries (OPEC) quadrupled the price of crude oil. This sent huge shock waves through the world economy. Prices of a necessary resource were driven up.

If we were to analyze this using the AD-AS model, the initial change would enter through the AS curve because the price of a resource changed.
an increase in the money supply

If the Federal Reserve were to increase the money supply, one could analyze the effects of the policy change. An increase in the money supply causes the AD curve to shift to the right.