

The Demand Curve

[Supply](#) and [demand](#) are fundamental concepts in economics. Usually, they're represented by a graph like this. So what does this mean?

Well, let's start with the demand curve. In short, a demand curve shows how much of a good people will want at different prices. What happens when there's a big sale? Well, at a lower price people buy more. More shirts, more pants, more video games, and they do stuff like this. This is what happens on Black Friday when retailers lower their prices to get people to buy stuff for Christmas. The demand curve illustrates the intuition for why people go nuts on Black Friday. Price is shown on the vertical axis, and quantity is shown on the horizontal. Here's the normal price, and here's the Black Friday reduced price. Simply put, the quantity demanded increases as the price gets lower. But let's delve a little deeper.

There's a different demand curve for every good or service out there, but the ideas are the same. So, let's look at the demand curve for one of the most important products in the world- oil. Oil is used in a wide variety of products, from fuelling cars and planes, to heating homes, and making plastic for rubber duckies. Looking at the demand curve for oil, we see a familiar relationship between price and the quantity demanded. At a high price, \$55 per barrel, there's a relatively low demand, let's say five million barrels. At \$20 per barrel, 25 million barrels are demanded. As the price goes down, the demand for oil increases. And at \$5 per barrel, 50 million barrels of oil are demanded.

But, there's more to why the demand curve looks like this. As we mentioned before, oil has many uses. Some of those are high-value uses, uses for which oil has few substitutes. An example would be jet fuel. Right now, you can't fly jets on corn or natural gas. If you want planes that fly, you're stuck with using oil.

Other uses are low-value uses, like making gasoline or plastic for these guys. When oil prices are relatively low, the oil that is being demanded is used for high and low-value goods alike. As the price of oil goes up so does the price of making plastic and gasoline. And at some point the cost of these value used products will get high enough that some people might skip buying a rubber ducky altogether or buy a substitute like a wooden bath toy. Same goes for gasoline, as the price rises people will economize. They'll buy more fuel efficient cars or forego that road trip completely. For these consumers, the benefit of buying these products is too little to justify the cost. At these high prices, the demanders that are left are the ones who value oil the highest. For them, the benefit of, say, having planes that fly outweighs the increase cost. They still demand

oil. So, with a simple line, the demand curve summarizes all the many and diverse ways that people respond to a change in price. But, it doesn't stop here.

The supply curve

Now that we've got the [demand curve](#) down, let's move on to the [supply curve](#). A supply curve shows how much of a good suppliers are willing and able to supply at different prices. As with the demand curve, there's a supply curve for every good and service. And again the ideas are the same, so let's look at the supply curve for oil.

We see an intuitive relationship between price and the quantity supplied. As the price goes up, the quantity of oil that companies are willing to supply increases.

In this example, in a low price, \$5 per barrel, let's say 10 million barrels of oil are supplied per day. At \$20 per barrel, 25 million barrels are supplied, and at \$55 per barrel, 50 million barrels are supplied. So in general, a higher price means a greater quantity supplied.

Let's delve deeper and see why. Oil exists all over the world, but it's not equally easy to extract. In some places like Saudi Arabia, it's really easy to get oil out of the ground. It costs about \$2 a barrel to extract. Oil in the U. S., like from Alaska, is a lot deeper and getting out costs more, at least \$10 per barrel. And producing oil from an oil rig like the Atlantis rig in the Gulf Coast is even more expensive. That rig has to descend more than a mile underwater before drilling even begins. When oil prices are relatively low the only suppliers that can turn a profit are those who can get to the oil cheaply, like Saudi Arabia. As the price goes up, other suppliers in Nigeria, Russia, and Alaska who have higher extraction costs start to become profitable, so they can enter the market.

As the price gets higher, even the most expensive extraction techniques become profitable. The supply curve slopes upward because the only way the quantity of oil can be increased is to exploit higher and higher cost sources of oil. As the price of oil goes up, the depth of the oil wells goes down.

With this simple line the supply curve summarizes the way suppliers respond to a change in price including how suppliers will enter and exit the market depending on the price.

So far we've said things like "if the price goes down, buyers will want to buy more" or "if the price rises suppliers will want to sell more". But we haven't said anything about how prices are determined. That's the subject for the next video, [Equilibrium](#).

The equilibrium Price and quantity

We know from previous lessons that the [demand curve](#) and the [supply curve](#) show how buyers and sellers respectively respond to changes in the price of a good. In this lesson, we'll show you how the interactions of buyers and sellers determine the price.

Let's start with the punch line. The [equilibrium price](#) is the price where the quantity demanded is equal to the quantity supplied, right here, and this is the equilibrium quantity. Why is this the equilibrium price? At any other price, forces are put into play that will push the price towards the equilibrium price. It's kind of like a ball in a bowl where the ball always returns to one stable position. The equilibrium price is the only place where the price is stable.

To see why, the first thing to understand is that buyers don't compete against sellers. Buyers compete against other buyers. A buyer obtains goods by bidding higher than other buyers. And sellers compete against other sellers by offering to sell at lower prices. Think about it. At an auction, the buyer with the highest bid gets the item and the seller with the lowest price makes the sale.

So let's say the price of oil is currently \$50 a barrel, that's above the equilibrium price of \$30 a barrel. At \$50 a barrel, the quantity supplied is more than the quantity demanded. So we say there is a surplus, so what happens? It's sale time! When there's a surplus, sellers can't sell as much as they would like to at the going price, so sellers have an incentive to lower their price a little bit so they could out compete other sellers and sell more. The price will continue to fall until the quantity demanded is equal to the quantity supplied and equilibrium is reached.

Now let's say the price is less than the equilibrium price, say \$15 a barrel. At \$15 a barrel, the quantity demanded exceeds the quantity supplied, a [shortage](#). And what happens now? When there's a shortage, buyers can't get as much of the good as they want at the going price so they compete to buy more by bidding up the price. Now since buyers are easy to find sellers also have an incentive to raise the price. The price will continue to rise until quantity demanded is equal to the quantity supplied and equilibrium is reached.

At any price other than the equilibrium price, the incentives of the buyers and sellers push the price towards the equilibrium price. Only the equilibrium price is stable.

Now let's take a deeper look at the market equilibrium and some of its properties. Remember that there are many different users of oil and many different uses for oil each with substitutes, alternatives, and values. At any specific price of oil, there's a group of buyers who value oil

enough to demand it at that price. And as the price changes, so do the buyers and their users. On the supply side, at each price on the supply curve, we're looking at a group of suppliers who's cost of extraction is low enough to be profitable at that price.

At the equilibrium price, these higher value groups are the buyers and these lower value groups are the non-buyers. Also notice that every seller has lower cost than any of the non-sellers. Since the buyers with the highest values buy and the sellers with the lowest costs sell, the gain from trade, the difference between the value a good creates and its cost, is maximized. In addition, at the equilibrium quantity, every trade that can generate value does generate value up until the very last trade where the value to buyers is just equal to the cost to sellers.

In a free market, there are no unexploited gains from trade and there are no wasteful trades. If the quantity exchanged were greater than equilibrium quantity for example, we would be drilling deep and expensive oil wells just to produce more rubber duckies and that would be wasteful. In a free market, buyers and sellers acting in their own self-interest end up at a price and quantity that allocates oil to the highest value buyers produced by the lowest cost sellers in a way that maximizes the gains from trade, the sum of the benefits to buyers and sellers.

This is one of the reasons [Adam Smith](#) said that the market process works like an [invisible hand](#) to promote the social good.