

What Is Supply Elasticity? What Factors Influence It?

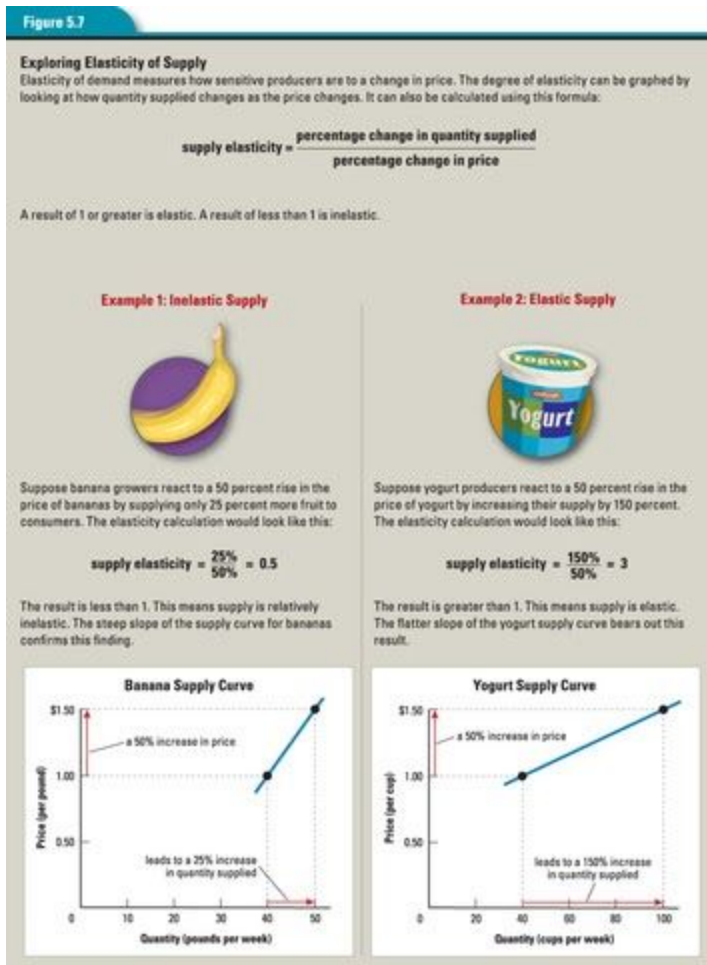
Economists apply the principle of elasticity to supply in the same way they apply it to demand. **Elasticity of supply** is a measure of the sensitivity of producers to a change in price. It tells economists how much a producer will change the quantity supplied in response to a change in price.

Elasticity of Supply: A Measure of Producers' Sensitivity to Price Changes

The law of supply tells us that quantity supplied moves in the same direction as price. As prices rise, producers are motivated to increase production levels in the hope of making higher profits. Thus a producer whose supply is elastic will likely respond to an increase in price with an increase in quantity supplied.

Yogurt makers, for example, are flexible producers. They can churn out more yogurt fairly easily in response to even a small increase in price. They can also slow production just as quickly if the price of yogurt decreases. The supply of yogurt, in this case, is relatively elastic.

Not so for antiques. The supply of genuine antiques is limited, and their numbers do not increase much over time. An antiques dealer cannot simply create more antiques to take advantage of increasing prices. Antiques dealers, therefore, are not very responsive to changes in price because their supply of antiques is inelastic.



The supply of bananas may be equally inelastic, but for different reasons. Growers can increase the quantity supplied by expanding their banana plantations. But there will be a lag time between planting new banana trees and harvesting more fruit. Until the new plantations begin to produce, the supply of bananas will remain relatively inelastic.

Calculating and Graphing Elasticity of Supply

Economists calculate elasticity of supply the same way they do demand, using the following formula:

supply elasticity = percentage change in quantity supplied/percentage change in price

If the result is greater than 1, supply is said to be elastic. If the result is less than 1, it is inelastic. If the result is exactly 1—the percentage change in price equals the percentage change in quantity supplied—the result is **unitary elastic supply**. In Figure 5.7, you can see how these calculations work out for yogurt and bananas.

Figure 5.7 also illustrates how elasticity of supply can be graphed using a supply curve. The first graph shows a supply curve for bananas. You can see that even a 50 percent rise in the price of bananas yields a relatively small change in the quantity supplied. The result is a supply curve with a steep slope. The quantity of bananas supplied moves only slightly along this steep curve when the price increases or decreases.

The second graph shows a supply curve for yogurt. Here a 50 percent change in price causes a relatively large change in the quantity supplied. The result is a supply curve with a flatter slope. The quantity of yogurt supplied moves much farther along this curve in response to price changes than is the case with bananas.

As with demand curves, economists classify supply curves according to their degree of elasticity. The only way to know for certain whether a supply curve is elastic or inelastic is to run the numbers. But as a general rule, we can say that the flatter the supply curve, the more likely it is that supply is elastic. The steeper the curve, the more likely it is that supply is inelastic.

Factors that Influence Elasticity of Supply

Why is the supply of some goods elastic and other goods inelastic? Several things can influence the elasticity of supply at different points in the **supply chain**. The supply chain is the network of people, organizations, and activities involved in supplying goods and services to consumers. The supply chain begins with the delivery of needed inputs to the producer, continues through the production process, and ends with the distribution of the finished product to consumers. Along the way, supply can be affected by any or all of the following factors.

Availability of inputs. Are the inputs needed at the beginning of the supply chain readily available? If the answer is yes, then supply of the product based on those inputs will probably be elastic. Suppliers can offer more or less of the good or service in response to a price change without too much trouble.

If key raw materials or other essential inputs are less available, supply is likely to be inelastic. The supply of medical care is a good example. The most important input for good medical care is a trained physician. Medical schools turn out only so many new doctors each year. Producing more in response to a sudden rise in fees for medical services would be difficult.

Mobility of inputs. The ease with which inputs and products move through the supply chain also affects elasticity. A new highway, for example, might cut the time needed to ship oats, soybeans, and other inputs from farmers to the manufacturing plants where energy bars are produced. As a result, energy bar producers would be able to respond more quickly to changes in the price of energy bars.

Storage capacity. How easy it is to store products as they move through the supply chain has an impact on elasticity as well. Toothpaste, for example, can easily be stored in distribution-center warehouses. Producers can readily hold back or supply more tubes in response to price changes. Bananas, in contrast, are perishable. This makes it harder for producers to adjust their supply as prices change.

Time needed to adjust to a price change. The supply of many products is inelastic when the price actually changes, but it may become more elastic with the passage of time. The supply of bananas, for example, may be inelastic in the short run. But given enough time, banana producers will either increase or decrease their production to adjust to changes in the price of bananas.

At this point in your life, you probably do not have to worry about such factors as the mobility of inputs or storage capacity. The key thing to remember now is that the two most important forces in a market economy are demand and supply. Consumers, always looking for a bargain, are generally willing to demand more when the price goes down. Producers, always looking to increase profits, are generally willing to supply more when the price goes up. In the next chapter, you will see how demand interacts with supply to determine what you pay for the goods and services you most want.