

## An Important Relationship Between Elasticity and Total Revenue

Demand is elastic for one good and inelastic for another good. Does it matter? As you just read, it can matter to you as an individual, and it definitely matters to the sellers of goods. In particular, it matters to a seller's total revenue (money sellers receive for selling their goods). To see how elasticity of demand relates to a business's total revenue, let's consider four cases in detail. The cases look at both elastic and inelastic goods and what happens to each when the price rises, and when the price falls.

- **Case 1: Elastic Demand and a Price Increase**

Javier currently sells 100 basketballs a week at a price of \$20 each. His total revenue (price  $\times$  quantity) per week is \$2,000. Suppose Javier raises the price of his basketballs to \$22 each, a 10 percent increase in price. As a result, the quantity demanded falls from 100 to 75, a 25 percent reduction. The demand is elastic because the change in quantity demanded (25%) is greater than the change in price (10%). What happened to Javier's total revenue at the new price and quantity demanded? It is \$1,650: the new price (\$22) multiplied by the number of basketballs sold (75).

Notice that if demand is elastic, a price increase will lead to a decline in total revenue. Even though he raised the price, Javier's total revenue went down, from \$2,000 to \$1,650. An important lesson here is that an increase in price does not always bring about an increase in total revenue.

Elastic demand + Price increase =  
Total revenue decrease

- **Case 2: Elastic Demand and a Price Decrease**

In case 2, as in case 1, demand is elastic. This time, however, Javier lowers the price of his basketballs from \$20 to \$18, a



The Bureau of Labor Statistics (BLS) is an agency within the U.S. Department of Labor.

The agency collects data on prices in the economy. To see whether consumer prices are rising, falling, or remaining constant, go to the BLS Web site at [www.emcp.net/prices](http://www.emcp.net/prices). Once there, click on "Inflation & Consumer Spending." Next, scroll down the page until you see "Consumer Price Index (CPI)." The CPI is a measure of the prices of the goods and services purchased by consumers. Have prices risen, fallen, or remained constant in the last month reported? If prices have risen or fallen, by what percentage have they risen or fallen?

10 percent reduction in price. We know that if price falls, quantity demanded will rise. Also, if demand is elastic, the percentage change in quantity demanded is greater than the percentage change in price. Suppose quantity demanded rises from 100 to 130, a 30 percent increase. Total revenue at the new, lower price (\$18) and higher quantity demanded (130) is \$2,340. Thus, if demand is elastic and price is decreased, total revenue will increase.

Elastic demand + Price decrease =  
Total revenue increase

- **Case 3: Inelastic Demand and a Price Increase**

Now let's assume that the demand for basketballs is inelastic, rather than elastic, as it was in cases 1 and 2. Suppose Javier raises the price of his basketballs to \$22 each, a 10 percent increase in price. If demand is inelastic, the percentage change in quantity demanded must fall by less than the percentage rise in price. Suppose the quantity demanded falls from 100 to 95, a 5 percent reduction.

Javier's total revenue at the new price and quantity demanded is \$2,090, which