Demand and Supply

Economics

How Do Demand and Price Interact?

- Demand = What we are willing and able to buy at various prices. Demand is expressed in terms of a time frame: eg. "per day" or "per week".
- Quantity Demand - the amount of a good or service that consumers are willing and able to buy at a specific price.

Demand Schedule

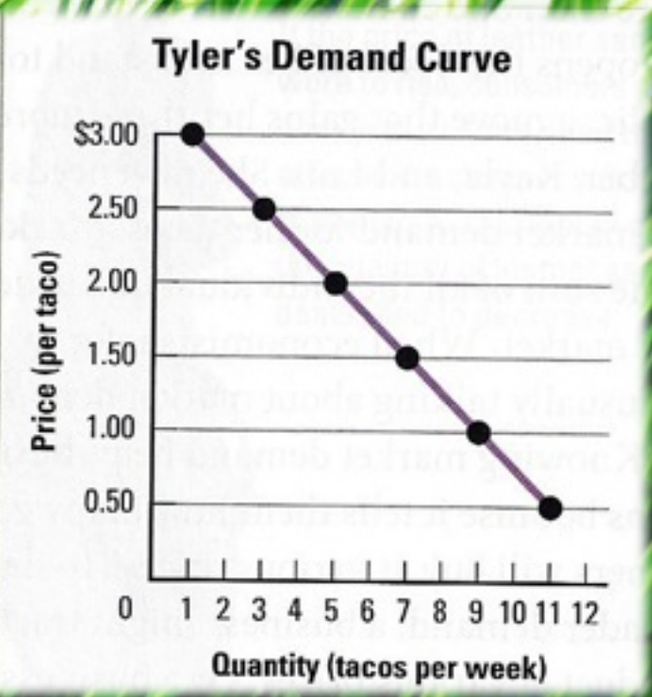
Demand schedules list the quantities of goods that individuals are willing to buy at various prices.

As prices increase, the quantity that individuals are able to buy decreases.

Demand curves can be straight or curved.

Tyler's Demand Schedule

Price (per taco)	Quantity (tacos per week)
$0.50	11
1.00	9
1.50	7
2.00	5
2.50	3
3.00	1



Market Demand

- Market demand is the sum of all the individual quantities demanded in a market.
- How might knowing market demand help business owners plan?

Graphing Market Demand

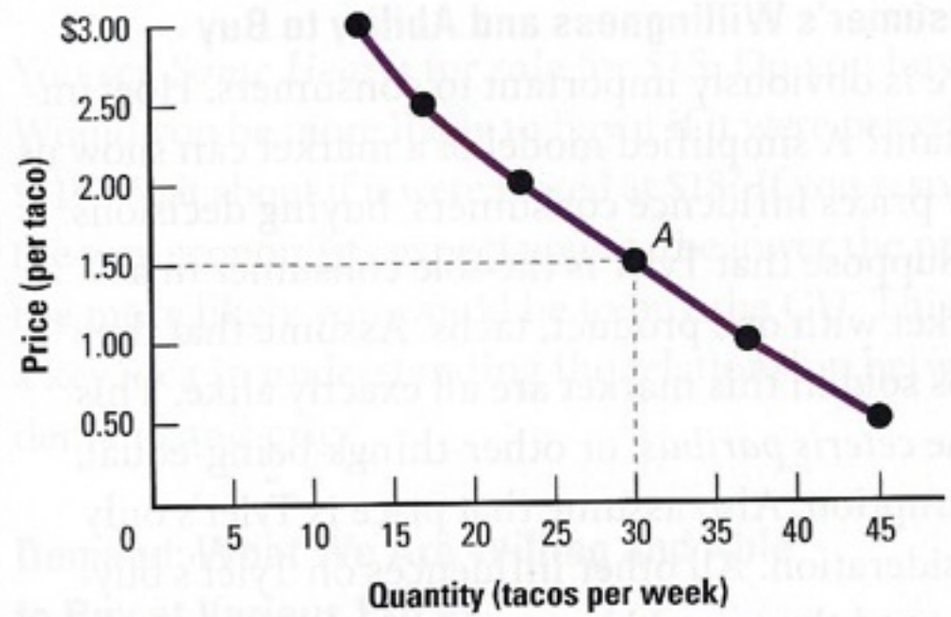
Market demand is the sum of the individual quantities demanded in a market. In this case, the market is made up of the four consumers listed on the demand schedule.

- When plotted on a graph, the data from the schedule form a demand curve for Jasmine's tacos.
- Point *A* on the curve represents 30 tacos (7 + 7 + 6 + 10) demanded at $1.50 per taco. At this price, Jasmine can expect to sell 30 tacos a week.

Market Demand Schedule

Price (per taco)	Quantity (tacos per week) Tyler		Amber		Kayla		Luis		MARKET
$0.50	11	+	10	+	11	+	13	=	45
1.00	9		9		8		11		37
1.50	7		7		6		10		30
2.00	5		6		5		7		23
2.50	3		4		4		6		17
3.00	1		3		4		5		13

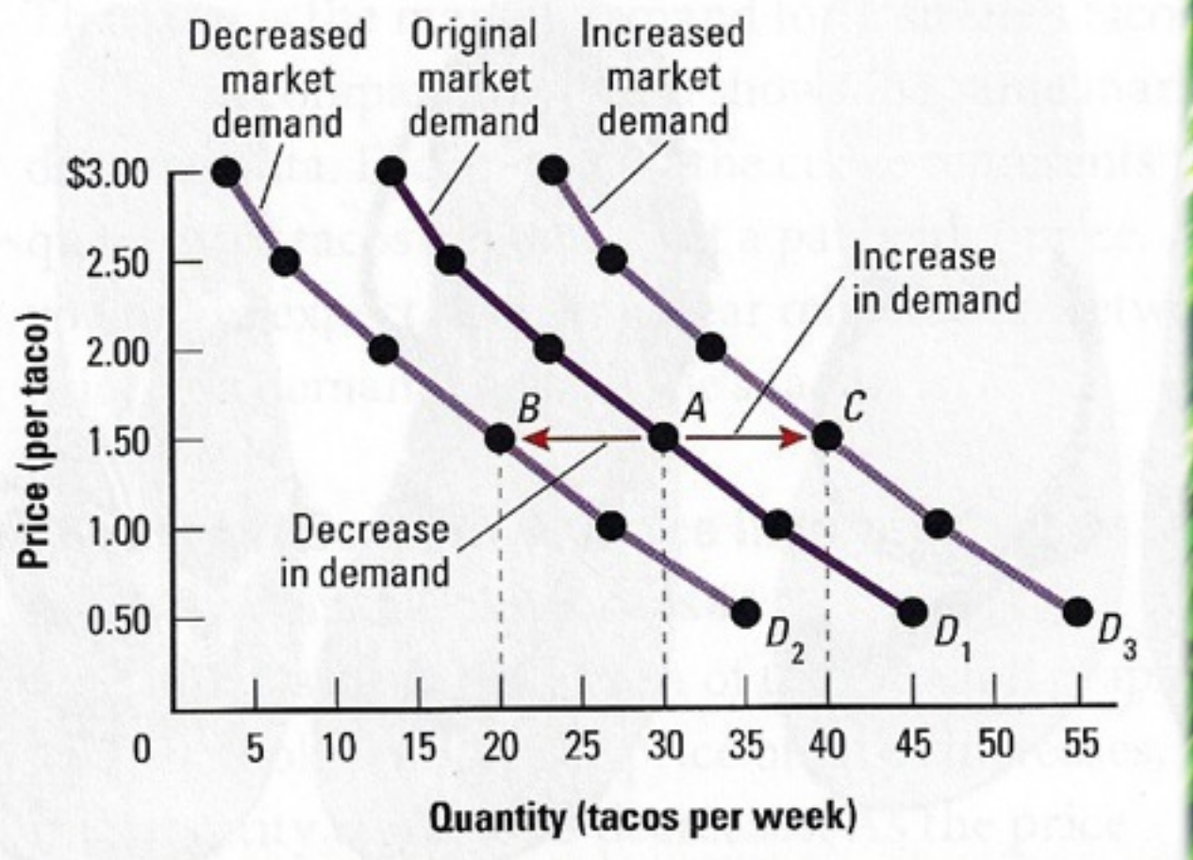
Market Demand Curve



Market Demand Schedule

Price (per taco)	Quantity (tacos per week)		
	Decreased Market Demand	Original Market Demand	Increased Market Demand
$0.50	35	45	55
1.00	27	37	47
1.50	20	30	40
2.00	13	23	33
2.50	7	17	27
3.00	3	13	23

Market Demand Curves



The Law of Demand

- There is an <u>inverse</u> relationship between price and quantity demanded.
- Why do price and quantity demanded move in opposite directions?
- <u>3 Factors:</u> 1) The Law of diminishing marginal utility; 2) the Income Effect - scarcity of peoples' incomes; 3) The Substitute Effect - At some point, people will substitute a cheaper product for a more expensive one.

What can cause demand to change?

- A change in demand occurs when quantities demanded increase or decrease at all prices.
- <u>Demand shifters</u> - Changes in income, Changes in the number of consumers, Changes in consumer tastes and preferences, Changes in consumer expectations, Changes in the price of substitute goods, Changes in the price of complementary goods (eg. hot dogs and buns).

Demand Shifters

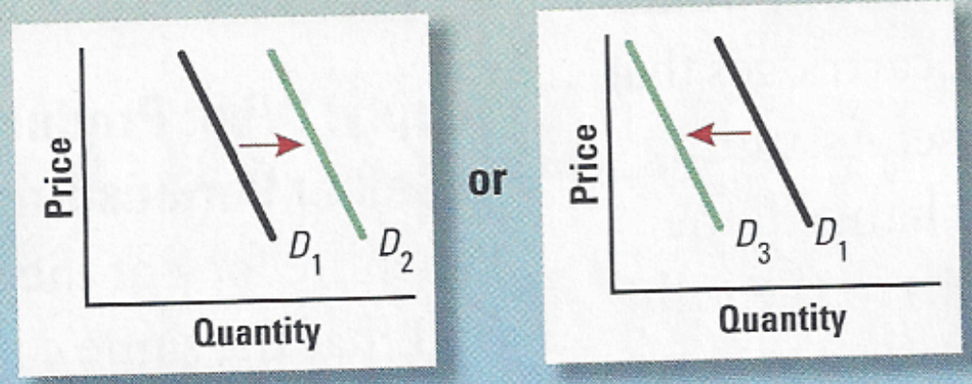
All but one of the factors listed here are demand shifters. These shifters can cause an increase or a decrease in demand at every point along a demand curve.

A change in . . .

Consumer income
The number of consumers
Consumer tastes and preferences
Consumer expectations
The price of substitute goods
The price of complementary goods

Can lead to . . .

A shift in the demand curve

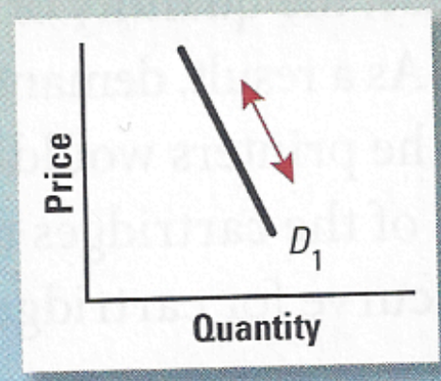


A change in . . .

Price

Can lead to . . .

Movement along the demand curve



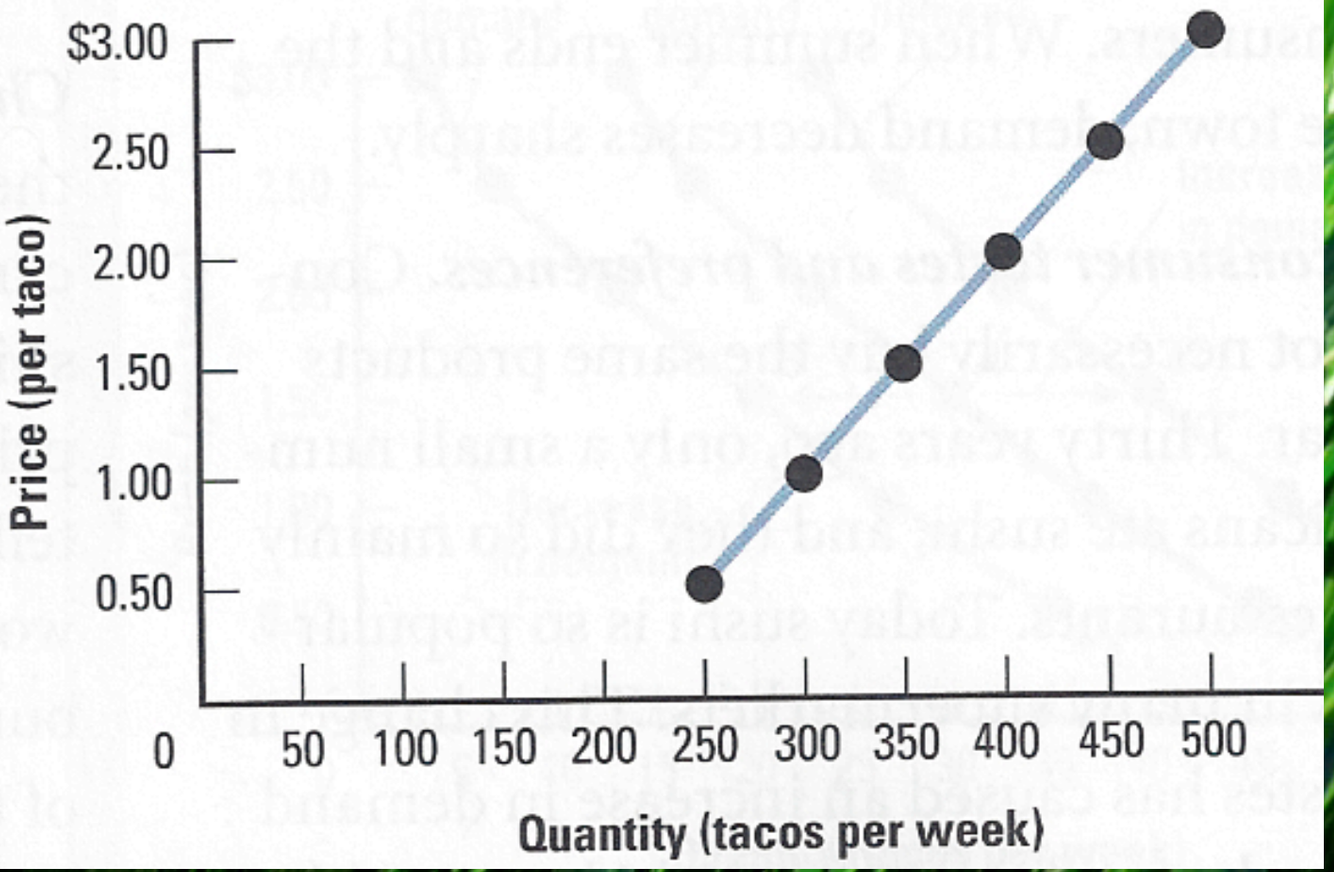
How do Supply and Price Interact?

- Where consumers create demand, producers create supply.
- Producers decide what to supply and how much to produce.
- Price also pays a crucial role for producers. The lower the price, the fewer products that producers are willing to sell.

Jasmine's Supply Schedule

Price (per taco)	Quantity (tacos per week)
$0.50	250
1.00	300
1.50	350
2.00	400
2.50	450
3.00	500

Jasmine's Supply Curve



Supply

- Supply: What producers are willing and able to sell at various prices.
- Supply Schedules and Supply Curves are similar to Demand Schedules and Curves.
- Market supply is the sum of all the individual quantities supplied.
- The Law of Supply says that price and quantity move in the same direction.

The Law of Supply

- Price and quantity move in the same direction for 2 reasons:
  - Production decisions by existing producers - When prices rise, producers are motivated to increase production. When prices fall, producers are likely to cut production.
  - Market entries and exits - Producers enter and exit markets for profit reasons.

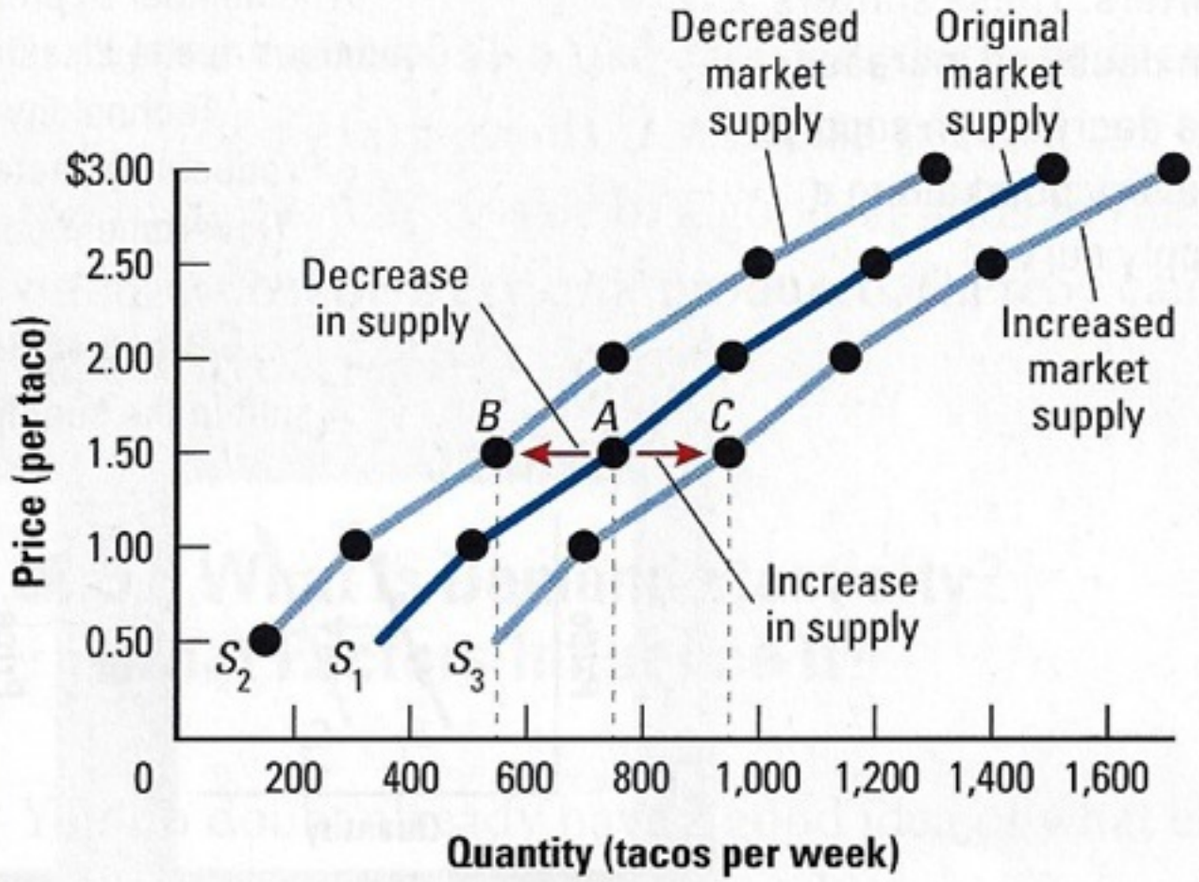
What can cause Supply to Change?

- Change in the number of producers can cause an increase or decrease in supply.
- Change in the cost of inputs (Factors of Production).
- Change in conditions due to natural disasters or international events.
- Change in technology.
- Change in producer expectations.
- Change in government policy (subsidies and excise tax).

Market Supply Schedules

Price (per taco)	Quantity (tacos per week)		
	Decreased Market Supply	Original Market Supply	Increased Market Supply
$0.50	150	350	550
1.00	300	500	700
1.50	550	750	950
2.00	750	950	1,150
2.50	1,000	1,200	1,400
3.00	1,300	1,500	1,700

Market Supply Curves



Supply Shifters

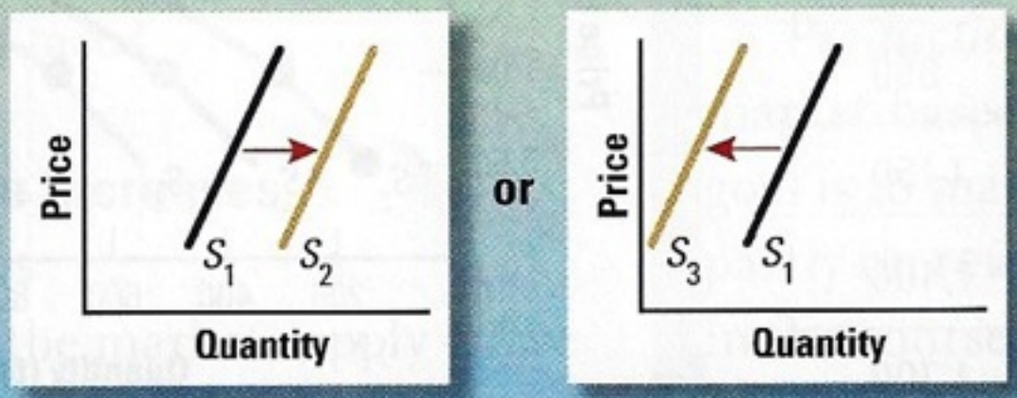
All but one of the factors listed here are supply shifters. These shifters can cause an increase or a decrease in supply at every point along a supply curve.

A change in . . .

The cost of inputs
The number of producers
Conditions due to disasters or crises
Technology
Producer expectations
Government policy

Can lead to . . .

A shift in the supply curve

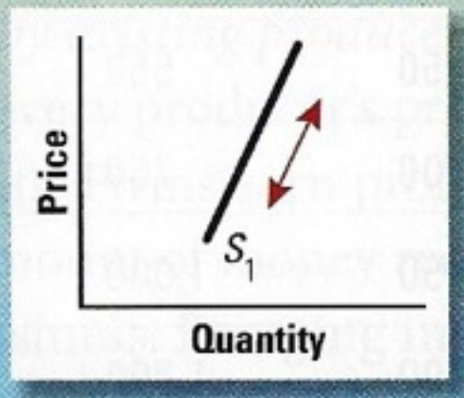


A change in . . .

Price

Can lead to . . .

Movement along the supply curve



What is Demand Elasticity?

- The degree to which quantity demanded changes in response to change in price.
- Demand for necessities tends to be inelastic (responds slightly or not al all in change in price. eg. gasoline or tooth paste).
- Demand for luxury items can be elastic (responsive to change in price. eg. an energy bar).

Calculating and Graphing Elasticity of Demand

$$\text{demand elasticity} = \frac{\text{percentage change in quantity demanded}}{\text{percentage change in price}}$$

esult of greater than 1 is elastic. A result of less than 1 is inelastic.

Example 1: Inelastic Demand

ppose the price of toothpaste were to rise from $2.00 to .00. This is a 50 percent increase in price. Also suppose nsumers reacted to this price rise by buying 9 percent wer tubes of toothpaste. The elasticity calculation would ok like this:

$$\text{demand elasticity} = \frac{9\%}{50\%} = 0.18$$

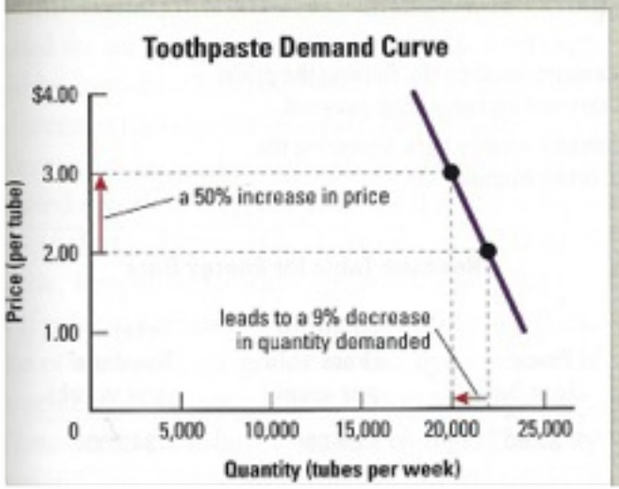
e result is less than 1. This means demand for toothpaste this market is relativcly inelastic. The relatively steep slope the demand curve for toothpaste confirms this finding.

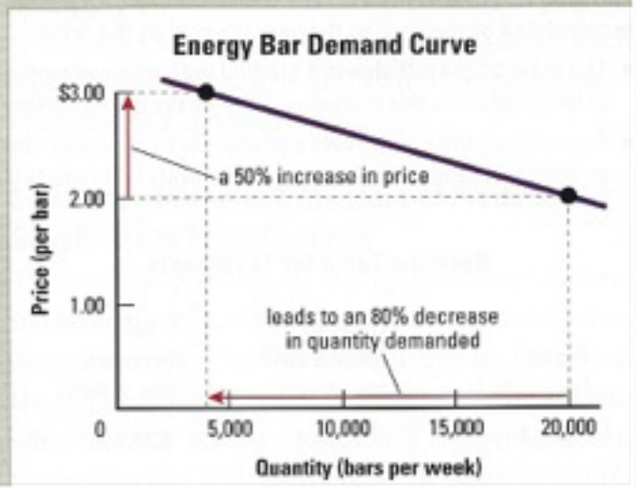
Example 2: Elastic Demand

Now suppose the price of energy bars rose 50 percent, from $2.00 to $3.00. And suppose consumers reacted to this price increase by buying 80 percent fewer bars. The elasticity calculation would look like this:

$$\text{demand elasticity} = \frac{80\%}{50\%} = 1.4$$

The result is greater than 1. This means demand for energy bars in this market is relatively elastic. The flatter slope of the demand curve for energy bars confirms this finding.





Measuring Elasticity of Demand with Total Revenue Test

Elasticity of Demand and the Total Revenue Test

The total revenue test is a way to calculate elasticity of demand. The total revenue of a good or service is calculated by multiplying the quantity sold by the price.

- The table on the left shows a product with relatively inelastic demand: toothpaste. Raising the price of this product in this market will likely have a small effect on sales and increase total revenue.
- The table on the right shows a product with relatively elastic demand: energy bars. Lowering the price of this product in this market will likely increase sales and total revenue.

Revenue Table for Toothpaste

Price (per tube)	×	Quantity (tubes sold per week)	=	Total Revenue (per week)
$1.50		23,000		$34,500
2.00		22,000		44,000
2.50		21,000		52,500
3.00		20,000		60,000
3.50		19,000		66,500

Revenue Table for Energy Bars

Price (per bar)	×	Quantity (bars sold per week)	=	Total Revenue (per week)
$2.00		20,000		$40,000
2.25		16,000		36,000
2.50		12,000		30,000
2.75		8,000		22,000
3.00		4,000		12,000

Factors that Influence Elasticity of Demand

- Availability of substitutes. Eg. sports drinks vs. milk.
- Price relative to income. Eg. "Big Ticket" items vs. minor purchases.
- Necessity vs. Luxury - goods we can and can't live without.
- Time needed to adjust to a price change.

Supply Elasticity and the Factors that Influence it.

- **Elasticity of Supply:** A Measure of Producers' Sensitivity to Price Changes.
- The Supply Chain - Network involved in supplying goods and services to consumers.
- **Factors of Influence:** 1) Availability of Inputs 2) Mobility of Inputs 3) Storage Capacity 4) Time needed to adjust to a price change.

Summary

- The <u>two</u> most important forces in a market economy are <u>**demand and supply**</u>.
- <u>**Consumers**</u> are always looking for a bargain, and are willing to demand more when prices go down.
- <u>**Producers**</u> are always looking to increase profits, and are willing to supply more when prices go up.