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ECONOMICS OF MANAGEMENT

University of Technology Sydney

Economic for Management
Chapter 2 Demand, Supply and Equilibrium Prices

For Manager

- Managers need to understand supply and demand to develop their own competitive strategies and to respond to the actions of their competitors
- Managers need to understand how the structure of the market (i.e. competitive market) that their firm operates in impacts supply and demand
- Managers need to understand how public policy will impact supply and demand

Demand

- The functional relationship between the price of a good or service and the quantity demanded by consumers in a given period of time, all else held constant

Non-price Factors Influencing Demand

a. Tastes and Preferences – consumers' tastes and preferences change in accordance to trends, environmental issues, product lines, reports, marital status etc.
b. Income – the level of a person's income also affects demand, because demand incorporates both *willingness* and *ability* to pay for good.
   - **Normal goods** – an increase in an individual's income will increase the demand for a normal good i.e. an increased in income will cause a person to buy for steak (positively related)
     - Firms selling *normal goods* i.e. jewellery, automobiles experience increases in sales when the general economy is booming
   - **Inferior goods** – an increase in an individual's income will decrease the demand for an inferior good i.e. an increased in income will cause a person to eat less chicken (negatively related)
     - Firms selling *inferior goods* i.e. hamburger, cheap clothing experience increases in sales when the general economy is in recession
c. Prices of related goods
   - **Substitute goods** – two goods, X and Y are substitutes if an increase in the *price* of good Y causes consumers to increase their *demand* for good X or a decrease in the *price* of good Y causes consumers to decrease their *demand* for good X
     - Consumers view the 2 goods as being essentially the same and purchase the cheaper of the 2 goods i.e. Coke and Pepsi, McDonald and Hungry Jack
   - **Complementary goods** – two goods, X and Y are complementary if an increase in the price of good Y causes consumers to decrease their demand for good X or if a decrease in the price of good Y causes consumers to increase their demand for good X
     - Products or services that consumer use together (cross elasticity) i.e. computers and printers, frame and lenses
d. Future expectation – if consumers expect prices to be lower in the future, they may have less current demand than if they did not have those expectations. Likewise, if prices are expected to increase, consumers may demand more for the good at present
e. Number of potential consumers
   - A firm's marketing strategy is based on finding new groups of consumers who will purchase the product
   - Increasing migration from overseas will have a direct impact on the property and rental market
   - Increasing middle class in China will directly impact on the demand of Australian food export

Demand Function

$$2.1 \quad Q_{XD} = f(P_X, T, I, P_Y, P_Z, EXC, NC, \ldots)$$

where

Q_{XD} = quantity demanded of good X

P_X = price of good X

T = variables representing an individual's tastes and preferences

I = income

P_Y, P_Z = prices of goods Y and Z, which are related to the consumption of good X

EXC = consumer expectations about future prices

NC = number of consumers

Demand Curve

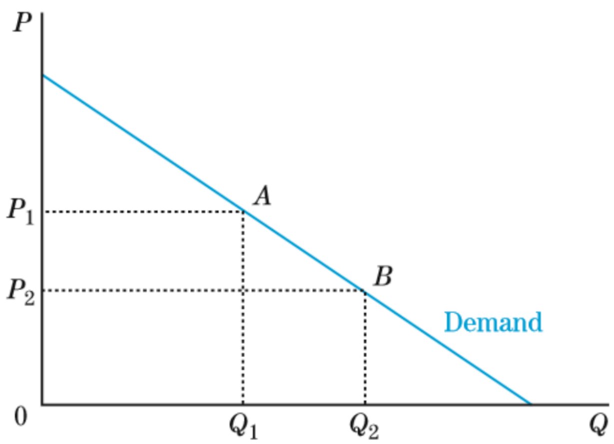


FIGURE 2.1

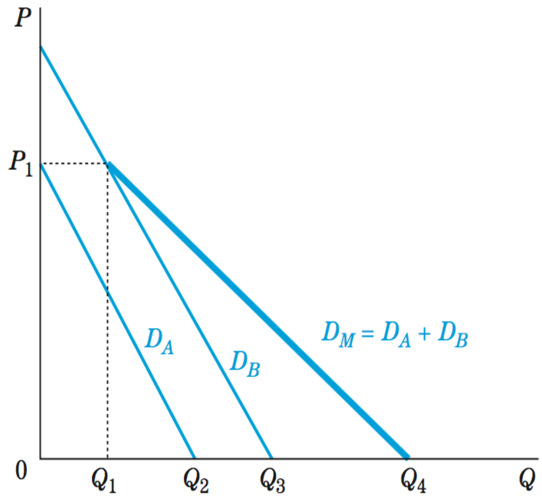
The Demand Curve for a Product

A demand curve shows the relationship between the price of a good and the quantity demanded, all else held constant.

- Demand curve are generally downward sloping, showing a negative or inverse relationship between the price of a good and the quantity demanded at that price, all else held constant
- As price decreases from P_1 to P_2, quantity increase from Q_1 to Q_2
- **Change in quantity demand** - the change in quantity consumers purchase when the price of good changes, all other factors held constant, pictured as a movement along a given demand curve
- **Change in demand** – the change in quantity purchased when one or more of the demand shifters change, pictured as a shift of the entire demand curve i.e. income increases, quantity demand will increase

Individual vs Market Demand Curves

FIGURE 2.3
Individual Versus Market Demand Curve
A market demand curve is derived from the horizontal summation of individual demand curves; that is, for every price, add the quantity each individual demands at that price to determine the market quantity demanded at that price.



- To derive the market demand curve for both individual (D_A and D_B), we do a *horizontal summation of individual demand curves*
- Based on the information in Figure 2.3, if another individual C enter into the market, the market demand curve would shift further to the right

Supply

- The functional relationship between the price (P) of a G&S and the quantity supplied (Qs) by producers in a given time period, all else held constant

Non-price Factors Influencing Supply

a. State of technology
   - The state of technology, or the body of knowledge about how to combine the inputs of production, affects what output producers will supply
   - Technology influences how the G&S is actually produced, which in turn affects the cost of production

b. Input prices
   - Input prices are the prices of all the inputs or factors of production – labour, capital, land and raw materials, used to produce the given product
   - These input prices affect the costs of production and, therefore, the prices at which producers are willing to supply different amounts of output

c. Prices of related in production
   - The prices of other goods related in production can also affect the supply of a particular good
   - **Substitute** – 2 goods are substitute in production if the same inputs can be used to produce either of the good such as switching from corn to tobacco plantation, annual income increase by 35%
   - **Complementary** – 2 goods are complementary in production if the production of one is a by product of the production of the other i.e. as more oil are produced, the supply of sulphur, which is removed from the products, also increases

d. Future expectation
   - If producers expect prices to increase in the future, they may supply less output now than without those expectations
   - The opposite could happen if produce expect prices to decrease in the future

e. Number of producers
   - The number of producers influences the total supply of a product at any given price
   - The number of producers may increase because of perceived profitability in a given industry or because of changes in law or regulations such as trade barrier i.e. increase competition due to deregulation and removal of import tax

Supply Function

$$\textbf{2.4}\quad Q_{XS} = f(P_X, TX, P_I, P_A, P_B, EXP, NP, \ldots)$$

where

Q_{XS} = quantity supplied of good X

P_X = price of good X

TX = state of technology

P_I = prices of the inputs of production

P_A, P_B = prices of goods A and B, which are related in production to good X

EXP = producer expectations about future prices

NP = number of producers

Supply Curve

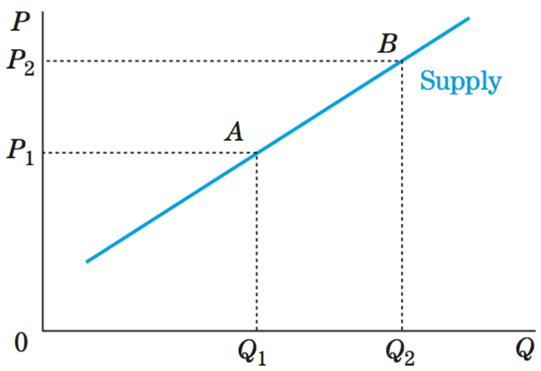
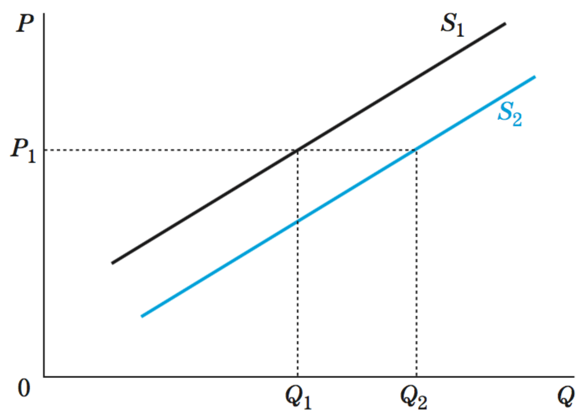


FIGURE 2.4
The Supply Curve for a Product
A supply curve shows the relationship between the price of a good and the quantity supplied, all else held constant.

- Supply curve generally slopes upward, indicating a positive or direct relationship between the price of the product and the quantity producers are willing to supply
- When the price of a good rises from P_1 to P_2, the quantity supplied rises from Q_1 to Q_2, all else equal
- **Change in quantity supply** – the change in amount of a good supplied when the price of the good changes, all other factors held constant, pictured as a movement along a given supply curve
- **Change in supply** – the change in the amount of a good supplied when one or more of a supply shifter change, pictured in as a shift of the entire supply curve i.e. technology improves, the at the same price P_1, the quantity supplied increases from Q_1 to Q_2

FIGURE 2.5
Change (Increase) in Supply
A change in supply occurs when one or more of the factors held constant in defining a given supply curve changes.



Demand, Supply and Equilibrium

- Market equilibrium – the market equilibrium price is that price for which the quantity supplied is equal to the quantity demanded

$$Qs = Qd$$

- **Shortage Disequilibrium**

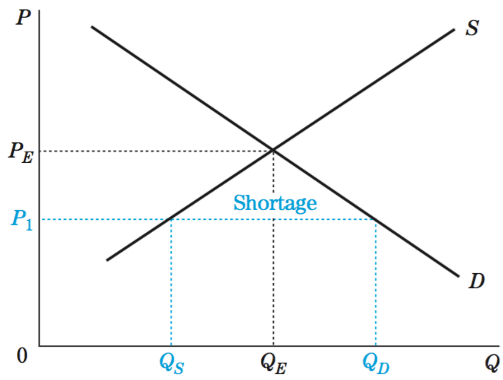
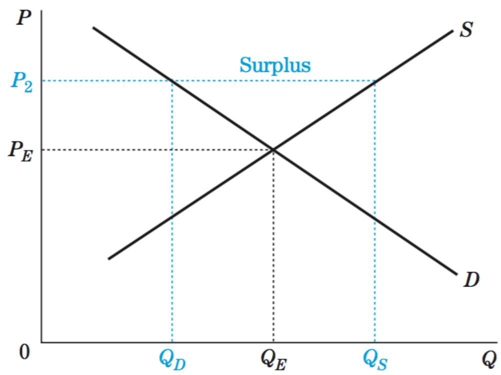


FIGURE 2.7
A Lower-Than-Equilibrium Price
A shortage of a good results when the market price, P_1, is below the equilibrium price, P_E.

- **Surplus Disequilibrium**

FIGURE 2.8
A Higher-Than-Equilibrium Price
A surplus of a good results when the market price, P_2, is above the equilibrium price, P_E.



Changes in Equilibrium Prices and Quantities

- Changes in equilibrium prices and quantities occur when market forces cause either the demand or the supply curve for a product to shift or both curves shift
- These shifts occur when one or more of the factors held constant behind a given demand or supply curve change
- **Change in Demand**
  - When non-price demand factors change i.e. consumers' tastes and preference, income, expectation, the demand curve shifts and produces a change in the equilibrium price and quantity

FIGURE 2.9
Change in Demand
A change in demand, represented by a shift of the demand curve, results in a movement along the supply curve.