

**Market Analysis: The Role of Price in Demand and Supply
(Relevant to AAT Examination Paper 4 – Business Economics and Financial
Mathematics)**

YO Lam

Theory of Demand

Demand is described as the quantity of products that people are willing and able to purchase at different prices. The law of demand states that consumers will purchase a larger quantity at a lower price than they would at a higher price. Or, alternatively, consumers will purchase less when the price is higher. Now let us illustrate the concept of demand through a simple example. Table 1 shows the demand for apartments by potential buyers at various prices in a given period of time; it assumes all factors (for example, income and mortgage rates) remain unchanged.

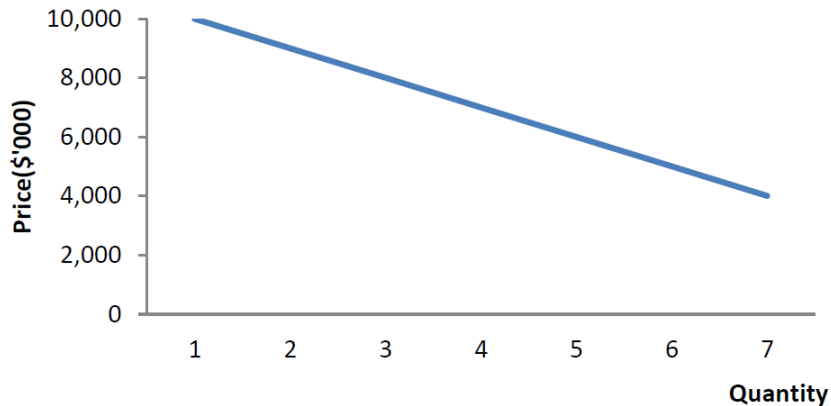
Price (\$'000)	Quantity Demanded
10,000	1
9,000	2
8,000	3
7,000	4
6,000	5
5,000	6
4,000	7

The Demand Schedule and Curve

In Table 1, the demand schedule follows the law of demand. In other words, the quantity demanded increases as the price falls. You can see that the number of apartments that consumers are willing and able to purchase depends on the selling price. If an apartment sells for a price of \$10,000,000, only one potential purchaser is willing to buy an apartment. However, two potential buyers are willing to purchase an apartment at a price of \$9,000,000; three if the price drops to \$8,000,000; and so on.

We can represent the demand schedules in the form of graphs. A demand curve is simply a graphic representation of demand and depicts the inverse (negative) relationship between price and quantity demanded. The slope is always downward in the demand curve, if everything else is held constant.

Figure 1: Hypothetical Demand Schedule for Apartments



Theory of Supply

Supply is defined as the number of products that people are willing to sell at different prices. The law of supply states that the producers are prepared to supply a larger quantity at higher prices than they would at lower prices, all other things being equal. Table 2 shows the number of owners who are willing to sell their apartments at various prices in a given period of time.

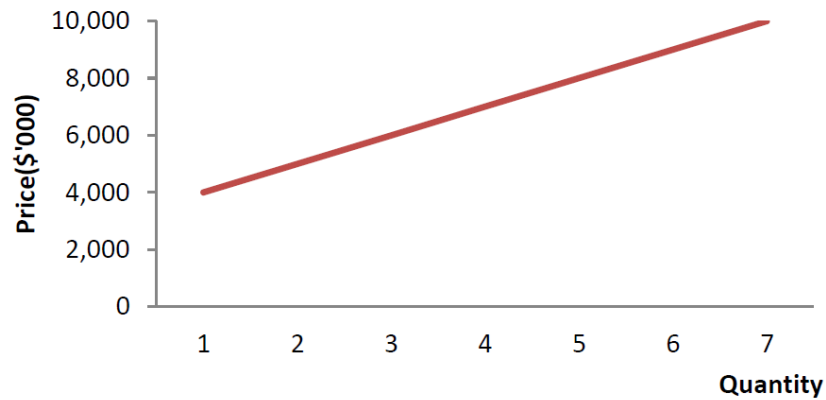
Price (\$'000)	Quantity Supplied
10,000	7
9,000	6
8,000	5
7,000	4
6,000	3
5,000	2
4,000	1

The Supply Schedule and Curve

A hypothetical market supply of apartments is given in Table 2. In that supply schedule, you can see that each owner has a slightly different idea about various prices. Only one owner will sell his apartment for \$4,000,000. However two owners are willing to sell for \$5,000,000, three owners for \$6,000,000, and so on. In fact, each time the price increases by \$1,000,000 one more owner becomes willing to sell an apartment.

This pattern follows to the law of supply. The supply schedule given in the Table 2 can also be shown as a supply curve. It demonstrates the direct (positive) relationship between price and quantity supplied. The supply curve usually slopes upwards from left to right because owners are willing to sell a greater quantity at higher prices.

Figure 2: Hypothetical Supply Schedule for Apartments

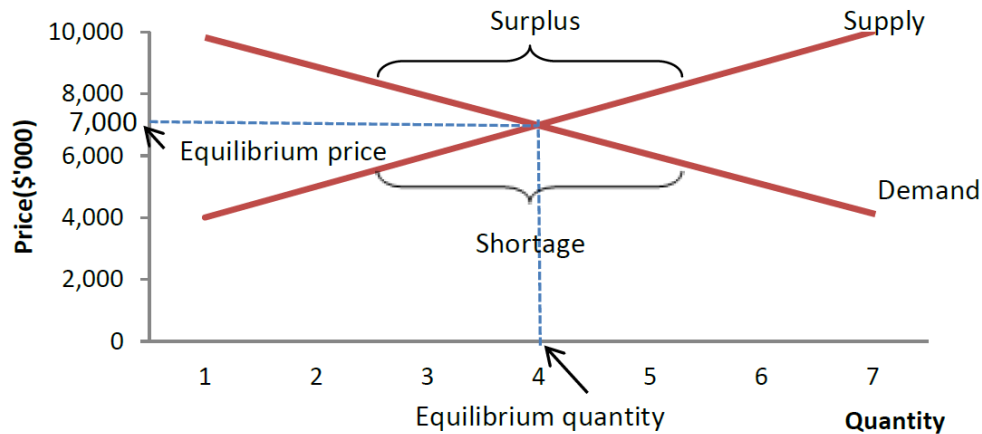


The Role of Prices

From above tables, we can see that the price is an important factor in both supply and demand. Producers consider prices when deciding how many goods and services to produce. Consumers consider prices when deciding how to spend their money.

Price (\$'000)	Quantity Demanded	Quantity Supplied	Surplus (+) or Shortage(-)	Pressure on Price
10,000	1	7	6	Downward
9,000	2	6	4	Downward
8,000	3	5	2	Downward
7,000	4	4	0	None
6,000	5	3	-2	Upward
5,000	6	2	-4	Upward
4,000	7	1	-6	Upward

Figure 3: Demand and Supply Schedule for Apartments



Shortage

A shortage exists when consumers are willing to buy more than producers put on sale at a given price.

What would happen in the market if apartments were selling for \$5,000,000? The price of \$5,000,000 would be more attractive to consumers, but not to owners. From Table 3, we can see that only 2 apartments would be supplied but 6 apartments would be demanded. Therefore at a price of \$5,000,000 there would be a shortage of apartments: an excess of quantity demanded over quantity supplied at that particular price. In this situation, some potential buyers would be willing to pay more than \$5,000,000 for their apartment. Competition among these buyers would lead to the apartment's price being pushed to a higher level, and the higher price would reduce the quantity demanded. As a result, the apartment price increases would eliminate the shortage of apartments.

Surplus

A surplus exists when consumers are not willing to buy as much as is produced at a particular price.

You can see what happen as we move from higher to lower prices in Table 3. At a price of \$10,000,000, owners are encouraged to sell their apartments but consumers discouraged from buying an apartment. In other words, at a price of \$10,000,000 there would be a surplus of apartments: an excess of quantity supplied over quantity demanded. How do owners response to a surplus? They are likely to drop the price of the apartment to try to compete for existing consumers. At the same time, consumers are likely to offer a lower price to buy the apartment. As a result, the lower price of the apartment would lead to an increase in the quantity demanded and fall in the quantity supplied, so that the surplus would be gradually eliminated.

The Nature of Equilibrium

Now that you understand the basics of shortage and surplus, here is a summary of the main points:

1. If the quantity supplied is larger than the quantity demanded, the price will tend to decrease.
2. If the quantity demanded is larger than the quantity supplied, the price will tend to increase.
3. If the quantity supplied equals the quantity demanded, there is no pressure for the price to change.

The equilibrium price is defined as the price at which the quantity supplied equals the quantity demanded. The equilibrium quantity is the quantity at which quantity supplied equals quantity demanded at the equilibrium price. In Figure 3, \$7,000,000 is the equilibrium price, and 4 units of apartments is the equilibrium quantity.

In a competitive market, whenever the existing price is higher or less than the equilibrium price, there will be upward or downward pressure pushing the price towards the equilibrium level (in the absence of price controls).

In above example, the equilibrium price balances the demand and supply and performs three important functions:

1. The equilibrium price rations apartments perfectly among the various possible buyers; at a price of \$7,000,000, 4 apartments are demanded.
2. The equilibrium price provides a signal to owners to supply the correct quantity which is the quantity consumers are willing to buy at that price, i.e. \$7,000,000.
3. The equilibrium price motivates owners to supply the desired quantity, i.e. 4 apartments.

The Impact of Changes in Demand and Supply

We have discussed price changes. But in many real situations, there are simultaneous changes in demand and supply. Let us consider an example in the HKSAR property market. The HKSAR government decided to cool down the property market and on 22 February 2013 proposed adjusting the ad valorem stamp duty rates on the transfer of immovable property. As we have seen from our analysis above, the new policy will suppress buying demand. At the same time, the HKSAR government will continue to increase the supply of property in the next few years. These two new policies will cause the demand curve to shift to the left (decreased demand) and the supply curve to shift to the right (increased supply). Looking at Figure 4, you can see what happens to the equilibrium price if both the demand and supply of apartments changes. In this case, the changes in demand and supply are pulling in opposite directions (demand decreases while supply increases). The effect is that the equilibrium price falls to a new equilibrium of less than \$7,000,000. The decline in price provides a signal to owners and consumers to determine their selling/buying strategy in the Hong Kong property market.

