MANAGERIAL ECONOMICS

ANALYSIS OF MARKET DEMAND

LECTURE 1 TO 3

ITM BUSINESS SCHOOL
PGDM 2021 - 2023 - SEM I
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Definition of Demand

*Demand is defined as the **ability and willingness to buy** specific quantities of goods in a given period of time at a particular price, ceteris paribus.*

- ***Ceteris paribus** is* a Latin phrase that means holding other factors constant while some other factors change.
- Demand differs from desire, want, wish and the like. A mere desire or want for a product will not cause producers to produce that product and place it in the market. The person who desires or wants to have a product must have the ability to buy and be willing to pay for that product; only then is that desire called a ***demand.***

Demand = <u>willingness</u> to buy + <u>ability</u> to buy

[Consumer must have the money to buy the product]

Desire, want and wish = Only the desire, without the ability to purchase the product

Definition of Demand

Notional demand: this demand is speculative and not always backed up by the ability to pay.

- **Willing to buy:** Purchasers must want a product if they are going to enter into the market with the intention of buying it.
- **Able to buy:** To an economist, the **notional demand** for a product, which emerges from wanting it, must be backed by purchasing power if the demand is to become an **effective demand**. Sellers are only willing to sell a product if the purchaser has the money to pay for the product. It is this effective demand that is of particular importance for economists.

Effective demand: demand that is supported by the ability to pay.

Demand Function

Demand function, or *demand*, shows relation between *P* & Q_d when all other variables are held constant

$$Q_d = f(P)$$

Traditionally price *(P)* is plotted on the vertical axis & quantity demanded (Q_d) is plotted on the horizontal axis

- The equation plotted is the *inverse demand function*

$$P = f(Q_d)$$

A point on a demand curve shows either:

- Maximum amount of a good that will be purchased for a given price
- Maximum price consumers will pay for a specific amount of the good

Law of Demand

The law of demand states that **the higher the price** of a product, **the lower the quantity demanded** of that product and **the lower the price** of a product, **the higher the quantity demanded**, ceteris paribus.

Example: If the price of chicken decreases, the quantity demand for chickens will increase. The consumer will prefer to buy more chickens when these are cheaper. At the same time, a consumer's purchasing power increases since he/she can save more money when the price of chicken falls.

Assumptions: Al. Tastes and preferences of consumers remain unchanged.
A2. Consumers' income remain the same.
A3. Price of related goods (complement or substitutes) should remain unchanged.
A4. Goods should not have any prestige value

- Based on the law of demand, **a negative relationship** exists between price and the quantity demanded.

$P\uparrow \; Q_{DD}\downarrow$

$P\downarrow \; Q_{DD}\uparrow$

Demand Schedule & Demand Curve

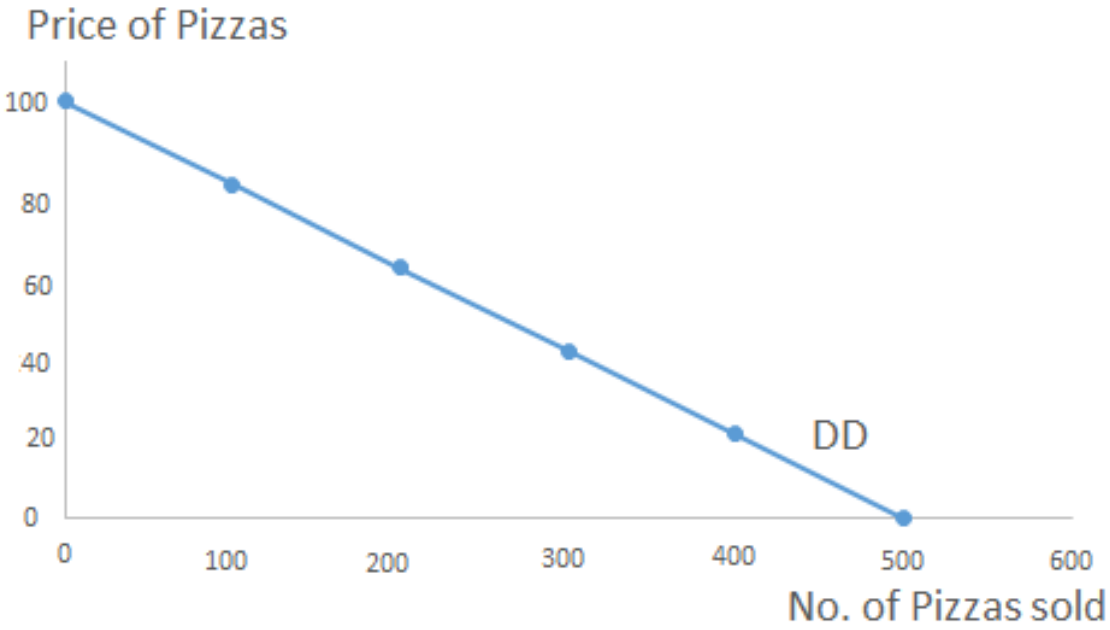
- The demand schedule for a product is a list of the quantity that a buyer is willing to buy at different prices at one particular time.
- The demand schedule represents a functional relationship between price and quantity demanded. It assumes that other demand determinants, such as income, preferences and price of related goods, are all constant.

- For example, consider a simple case of relationship between price of pizza and the number of pizza sold per week in your college canteen.
- The data given in table shows that as price of pizza decreases, its demand increases, or conversely, as pizza price increases, demand for it decreases.

Pizza Price	No. of Pizzas sold
100	00
80	100
60	200
40	300
20	400
00	500

Demand Schedule & Demand Curve

- The demand curve shows the relationship between the quantities of pizza demanded and its price, provided that everything else is constant. The demand curve must slope downwards due to the inverse relationship between price and quantity demanded (according to the law of demand).
- A little deeper observation shows that each fall in pizza price by Rs. 20 per piece results in increase in pizza demand by 100, or a one-rupee decrease in pizza price causes an increase in sale by 5 pizzas.



Pizza Price	No. of Pizzas sold
100	00
80	100
60	200
40	300
20	400
00	500

Demand Schedule & Demand Curve

- The relationship between the variables is specified and quantified by using a *statistical technique called regression.*
- When regression technique is applied to data given in Table it produces a pizza demand function of the following form;

$$D_p = 500 - 5P_p$$

- Equation gives the weekly demand function for pizza. It shows that at zero price, pizza demand equals 500 units; minus (—) sign shows inverse relationship between pizza price and pizza demand and number 5 imply that for each one-rupee change in price, demand changes by 5 units.

Application of demand function for predicting demand

- Once pizza demand function is estimated, the canteenwala can use the function for predicting the weekly demand for his pizza at a given price. For example. if he fixes pizza price at Rs. 60.

Demand Schedule & Demand Curve

When regression technique is applied to data given in Table it produces a pizza demand function of the following form

$$D_p = 500 - 5P_p \text{ ----------(1)}$$

Inverse Demand

In this we change depend variable as independent variable and vice versa.

So here P_P = Price of Pizza is now dependent variable and

D_P = Demand for Pizza independent variable, which was dependent variable in above equation 1.

$$P_P = 100 - 0.2D_P \text{----------(2)}$$

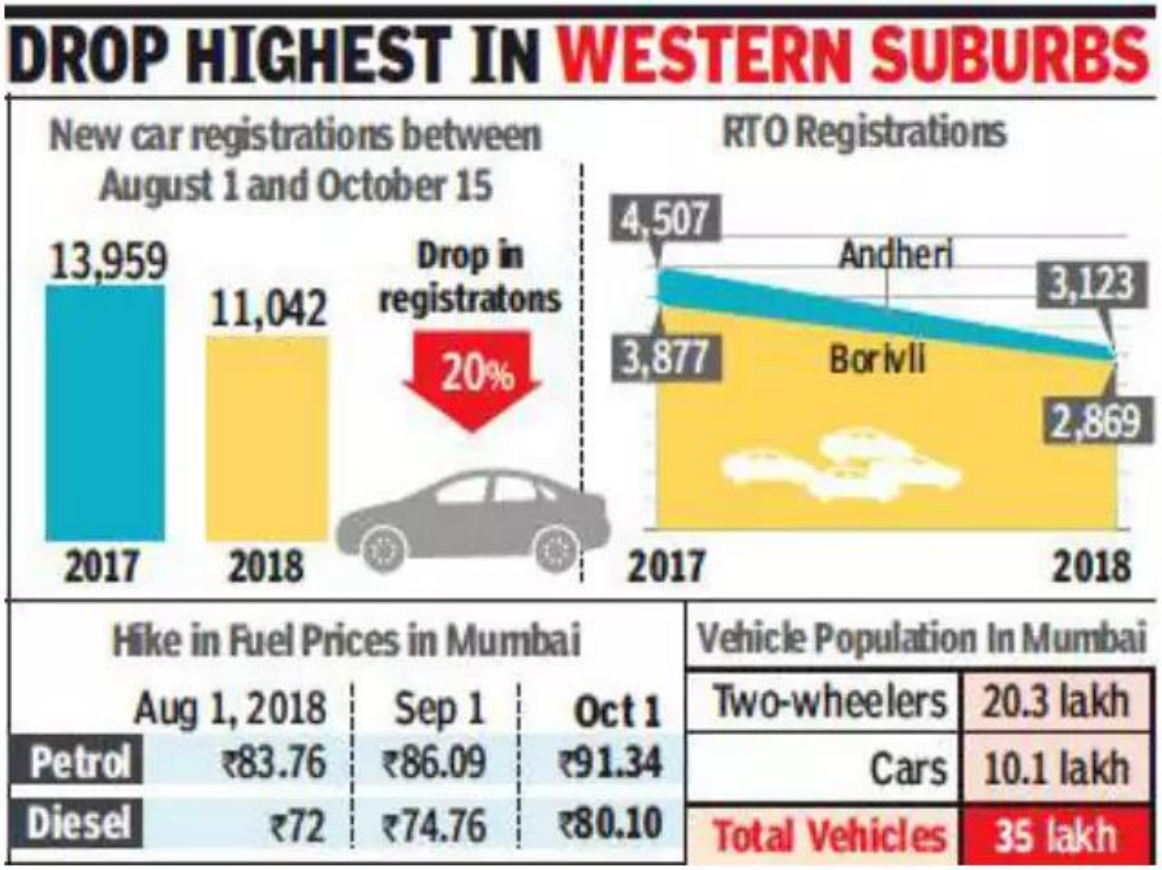
Pizza Price	No. of Pizzas sold
100	00
80	100
60	200
40	300
20	400
00	500

Case 1

Soaring fuel prices pull down Mumbai's car registrations by 20%

Rising fuel prices have had a direct impact on four-wheeler sales. Registration of new cars in Mumbai fell by 20% at city RTOs between August 1 and October 15

Somit Sen | TNN | October 29, 2018, 07:51 IST



Rising fuel prices have had a direct impact on four-wheeler sales. **Registration of new cars in Mumbai fell by 20% at city RTOs between August 1 and October 15**—the period when new car purchases were "subdued" due to rising fuel prices. The increase during this period was Rs 7.5 for petrol and Rs 8 for diesel.

Case 1

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Somit Sen | TNN | October 29, 2018, 07:51 IST

- **Drop in new car registrations is up to 30% at Andheri RTO** which caters to the western suburban areas between Bandra and Jogeshwari. The **number of cars registered at the four city RTOs between August 1 and October 15 was around 3,000 less than those registered during the same period last year**.
- **This is the period when fuel prices kept rising** (since August 1), touching a new high in Mumbai almost every day, and finally surging to a **record Rs 91.34 a litre for petrol in the first week of October. Diesel price had also peaked to Rs 80.10 a litre around the same time**.
- While fuel prices soared, new registrations at Andheri RTO dipped from 1,676 cars in August 2017 to 1,406 in August. Registrations fell from 2,059 in September 2017 to 1,263 this September and from 772 to 454 for the first fortnight of October.

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The number of cars registered fell from 4,507 in 2017 to 3,123 cars this year at Andheri RTO—a 30% drop. Borivli RTO saw the second major dip with 2,869 cars registered in this period compared to 3,877 registrations in 2017—a drop of 1,008. Wadala RTO, too, saw a dip of about 200 cars in this period, with the drop being 45 cars (from 455 last year to 410 this year), between October 1 and October 15—before Dussehra. Tardeo RTO also saw a dip of around 300 cars during the fuel price hike, sources said.

The official added that the situation could improve now that fuel prices have been dipping for the past eight days, and **registrations could go up during Diwali.**

Case 1

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Officials said before August, there was no major fuel price hike and so registration of new cars rose, but the drop was seen from August. **Two-wheeler registrations in the city crossed 20 lakh in Mumbai. Citizens prefer two-wheelers due to convenience of easy EMIs; fuel efficiency being much higher than that of a car; a bike can be used for short-distance travel and navigation on congested roads is easier**.

Analysis:

- In this case, the Law of demand is at work as the price of complementary goods(fuel) increases demand for Car decreases also demand for substitute goods(Bike) increases is called a Substitution Effect.
- Other variable or determinant like Diwali(Festive season) can increase the sales of Car.

Case 1
2020

COVID-19: Work from home leads to spike in demand for laptops, but supplies hit

THE HINDU

Sanjay Vijayakumar

CHENNAI 20 MARCH 2020 14:12 IST
UPDATED: 20 MARCH 2020 14:28 IST

With an **increasing number of companies looking at work from home options amid the COVID-19 outbreak, there has been a sudden spike in the demand for laptops.** However, there is a shortage in the market due to supply issues, according to industry players.

"The demand has been very sudden, and more companies have been looking to procure laptops, as they adopt work from home options. The availability is not at a level to match the demand in time," K. Purushothaman, former director at Nasscom, said.

Since a majority of the production takes place in China, supplies have been impacted, experts said

Case 1
2020

COVID-19: Work from home leads to spike in demand for laptops, but supplies hit

THE HINDU

"For large corporates the supply works on built-to-order basis and is shipped as per requirements. **In case of this segment, no one holds inventory**, unlike in the consumer segment. **Over the last 45 days the demand has spiked due to the work from home policies adopted by firms**," Mahesh R, Business Head, Digital Products, Croma, said.

Mr. Mahesh pointed out that the **majority of production happens in China and most factories were based in Wuhan,** and as a result of the COVID-19 epidemic, **supplies have been impacted**. "Normally what happens, is that those **who need supply in April, will have to shift stocks in February, which is essentially the Chinese New Year time frame**. **This was impacted due to the extended holiday there,"** Mr. Mahesh said. **He also pointed out that Intel accounted for 85% of the processors and they have been facing shortages for the last one year and are focusing on premium models.**

The annual size of the Indian personal computing market (desktops, laptops, tablets) is 12 million, out of which 4.5 million is the consumer segment and the remaining is the commercial segment.

Case 1
2020

COVID-19: Work from home leads to spike in demand for laptops, but supplies hit

THE HINDU

"The processor issue and supplies impacted due to the situation in China and the weaker rupee pushing up prices will all result in not being able to cater to the current demand. Also, our outlets in malls have been shut,"" Mr. Mahesh said.

Jaipal Singh, Associate Research Manager, Client Devices, IDC India**, pointed out that the entire supply is dependent on China.** IDC India is a research firm which tracks PC shipments. "**Even now, factories are operating at only half capacity in China, and this is expected to continue till April. So it would be difficult to meet the demand**. Companies are looking at buying refurbished devices and also at rental options to reduce the business impact," he said.

Law of Demand

Holding all other things constant (*ceteris paribus*), there is an inverse relationship between the price of a good and the quantity of the good demanded per time period.

- Substitution Effect
- Income Effect

Substitution Effect

- Assuming that *real income* is constant:
  - If the ***relative price*** **of a good rises**, then **consumers will try to substitute away from the good**. **Less will be purchased.**
  - If the ***relative price*** **of a good falls**, then **consumers will try to substitute away from other goods. More will be purchased.**
- The substitution effect is consistent with the law of demand.

Law of Demand

Substitute: an alternative good.

Substitution Effect

- Price and availability of related products: Two particular categories can be identified. First, substitutes, which are alternative goods and can satisfy the same want or need.
- Typical examples are Coca-Cola and Pepsi, both well-known brands of cola. A change in the price of one is likely to have an impact on the demand for the other and on any other similar cola products. The extent of the change in demand depends on the degree of substitutability. Coca-Cola and
- Pepsi are very close substitutes; Sprite, Fanta and Lipton Iced Tea are also substitute soft drinks but not as close.

Law of Demand

Income Effect

- The **real value of income** is **inversely related to the prices of goods.**
- A change in the real value of income:
  - will have a **direct effect on quantity demanded** if a **good is normal**.
  - will have an **inverse effect on quantity demanded** if a **good is inferior.**
- The income effect is consistent with the law of demand **only if a good is normal.**

Law of Demand

Income Effect

- Income: The ability to pay is vital when considering the importance of effective demand. For any individual, the demand for goods and services invariably depends upon income. (Usually this is taken to mean what a person has left after tax has been deducted). In terms of market demand, it refers to the income of all consumers and is invariably related to the state of the macroeconomy.

Law of Demand

Income Effect

- In general, there is a positive relationship between income and demand. An increase in the ability to pay usually leads to an increase in demand.
- Conversely, if the ability to pay falls then less is demanded. Goods and services that are characterised by this relationship are called **normal goods.**
- Most products are like this and include things like cars, restaurant meals, quality clothing, etc.

Law of Demand

Income Effect

- For some products, however, there is a negative relationship, with less being purchased as income rises. These are called **inferior goods.**
- Typical examples are poor quality foodstuffs; as consumers become better-off, they are more likely to buy less of these and, instead, purchase more fish, meat and premium priced foods with their increased income.

TOP TIP

A good for someone on a high income can be an inferior good whilst for someone on a low income, it can be a normal good.

Demand and Various Types of Goods

Normal Good

- A good or service for which an increase(decrease) in income causes consumers to demand more(less) of the good, holding all other variables in the general demand function constant

Inferior Good

- A good or service for which an increase(decrease) in income causes consumers to demand less(more) of the good, all other factors held constant.

Demand and Various Types of Goods

Substitutes

- Two goods are substitutes if an increase(decrease) in the price of one of goods cases consumers to demand more(less) of the other good, holding all other factors constant.

Complement: a good consumed with another.

- Two goods are complements if an increase(decrease) in the price of one of the goods case consumers to demand less(more) of the other good, all other things held constant.

Substitutes goods

Godrej 7 kg Fully-Automatic Front Loading Washing Machine (WF Eon 700 PASE, White)
by Godrej
₹25,999 ~~₹34,500~~
You Save: ₹8,501
prime
and 1 more promotion

Mitashi 7.8 Kg Fully-automatic Top-loading Washing Machine (MiFAWM78v20, Grey)
by Mitashi
₹22,090 offer (1 offer)
4.0 out of 5 stars 6

Bosch 7 kg Dryer (WTA76200IN, White)
by Bosch
₹33,309 ~~₹34,999~~
You Save: ₹1,690
prime
4.5 out of 5 stars 2

American Tourister Polycarbonate 55 cm Gun Metal Softsided Cabin Luggage (38W (0) 58 001)
₹3,860 ~~₹9,050~~
prime
4.0 out of 5 stars 197

American Tourister Polycarbonate 55 cms Midnight Blue Carry-On (38W (0) 11 001)
₹3,860 ~~₹9,050~~
prime
4.0 out of 5 stars 183

American Tourister Ellen ABS 54.5 cms Grey Hardsided Cabin Luggage (AMT ELLEN SP55 CM TSA GREY)
Lightning Deal
₹3,899 ~~₹8,960~~
prime

American Tourister Cruze ABS 55 cms Black Hardsided Carry-On (AN6 (0) 09 001)
Deal of the Day
₹3,899 ~~₹8,850~~
prime
4.0 out of 5 stars 25

Frequently bought together

Total price: ₹60,479.00

Add all three to Cart

- **This item:** HP 15-BS636TU Portable 15.6 FHD Laptop (6th Gen Intel Core i3 Processor i3-6006U/4GB/1TB/Windows 10... ₹28,990.00
- HP Premium HP-W2N96PA 15.6-inch Laptop Backpack (Blue/Grey) ₹999.00
- HP 15-BS637TU Portable FHD 15.6 Inch Laptop (6th Gen Intel Core i3 Processor i3-6006U/4GB/1TB... ₹30,490.00

HP

HP 15-BS636TU Portable 15.6 FHD Laptop (6th Gen Intel Core i3 Processor i3-6006U/4GB/1TB/Windows 10 Home 64-Bit/Intel HD Graphics 520) with Anti Glare and Fast Charge Support- Natural Silver

24 customer reviews | 60 answered questions

M.R.P.: ~~₹32,500.00~~
Price: ₹28,990.00 Fulfilled **FREE Delivery**.Details
You Save: ₹3,510.00 (11%)
Inclusive of all taxes

EMI starts at ₹1,378 per month. Options

In stock.

Delivery to **400013 - Mumbai** is currently not available for this item. Why?

Sold by Forever India. (4.6 out of 5 | 332 ratings) and Fulfilled by Amazon. Gift-wrap available.

10 offers from ₹28,990.00

HP

HP 15-BS637TU Portable FHD 15.6 Inch Laptop (6th Gen Intel Core i3 Processor i3-6006U/4GB/1TB/Windows 10 Home 64-bit/Microsoft Office Home & Student 2016/Intel HD Graphics 520) with Anti Glare and Fast Charge Support - Natural Silver

156 customer reviews | 97 answered questions

M.R.P.: ~~₹39,222.00~~
Deal of the Day: ₹30,490.00 Fulfilled **FREE Delivery**.Details
Ends in 05h 37m 31s
You Save: ₹8,732.00 (22%)
Inclusive of all taxes

EMI starts at ₹1,450. No cost EMI available if you checkout only with this item. Options

In stock.

Guaranteed delivery to pincode **400013** - Mumbai by **Tomorrow 9pm** with **One-Day Delivery** — Order in the next **6 hours and 1 minute** Details

Sold by Appario Retail Private Ltd (4.7 out of 5 | 43,855 ratings) and Fulfilled by Amazon. Gift-wrap available.

Substitutes and Upselling

HP

HP 15-BS636TU Portable 15.6 FHD Laptop (6th Gen Intel Core i3 Processor i3-6006U/4GB/1TB/Windows 10 Home 64-Bit/Intel HD Graphics 520) with Anti Glare and Fast Charge Support- Natural Silver

24 customer reviews | 60 answered questions

M.R.P.: ~~₹ 32,500.00~~
Price: ₹ 28,990.00 Fulfilled **FREE Delivery**.Details
You Save: ₹ 3,510.00 (11%)
Inclusive of all taxes

EMI starts at ₹ 1,378 per month. Options

In stock.

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In stock.

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Original

Upsell(substitute)

Upselling – trying to replace one product that is about to be selected with an alternative product – when your customer is considering *substitute products*. Notice in the screenshot from amazon.com (above) that ~9% of the people who were otherwise going to buy the original product instead were convinced to buy a more expensive *substitute* product. The goal in upselling is to create a win-win situation. Your customer gets more value from the substitute product, and you get more profit from the sale of the substitute than you would have received from the original. Everyone wins.

Complementary goods

Total price: ₹4,234.00

Add all three to Cart

These items are dispatched from and sold by different sellers. Show details

- **This item:** HP DeskJet 2131 All-in-One Printer ₹2,999.00
- Toppings Brand New Printer Cover with Free Cleaning Kit for HP DeskJet 2131 All-in-One Printer... ₹292.00
- HP 803 Tri-Color Original Ink Cartridge ₹943.00

Total price: ₹460.00

Add both to Cart

These items are dispatched from and sold by different sellers. Show details

- **This item:** Reynolds 045 Refill - (100 pcs) ₹400.00
- Reynolds 045 Fine Carbure Blue Ballpen, Pack of 10 ₹60.00

Complementary goods and Cross-selling

Cross-selling identifies products that satisfy additional, complementary needs that are unfulfilled by the original item.

Case 2

Pre-GST offers ensure leading consumer electronic retail chains rake in the moolah

Reliance Digital, Vijay Sales and Viveks said their shelves are almost empty now with some of them boasting of sales more than doubling this month.

By *Writankar Mukherjee*, *Sagar Malviya*, ET Bureau | Jun 28, 2017, 07.12 AM IST

Smooth Sale-ing

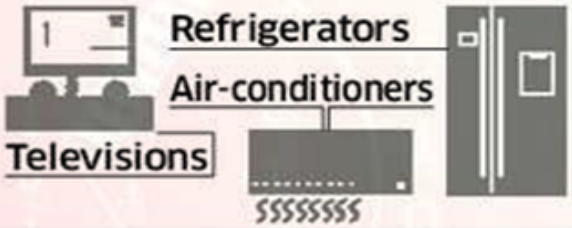
RELIANCE Retail's digital formats saw 80% jump in sales

MUMBAI-BASED Vijay Sales and Kohinoor saw sales surge 50% and 100%, respectively

GREAT Eastern sales grew 120%

PRIMARY sales from companies to retailers down 25%

TOP CATEGORIES SOLD



RETAILERS OFFERED THE maximum discount of 40-45% on open box stock – goods that had been on display

KOLKATA | MUMBAI: It's been **an early Diwali for the consumer electronics industry with large retail chains** saying they have **sold as many televisions, refrigerators and air-conditioners in June** as **they did in the peak festive season last year.**

» Durable **sales so far, this month have increased 85-90%** from the year earlier as **retailers offered big discounts of 20-45% to clear inventory** ahead of the goods and services tax (GST) rollout on July 1.

» Consumers went on a shopping spree over **expectations that prices are set to rise 3-5%** from July due to higher tax incidence.

Pre-GST offers ensure leading consumer electronic retail chains rake in the moolah

- Large chains such as Reliance Digital, Vijay Sales, Viveks, Great Eastern and Kohinoor said **their shelves are almost empty now with some of them boasting of sales more than doubling this month**, although the **effect of discounts will partly offset gains.**

- **Televisions, refrigerators, air conditioners, washing machines, kitchen devices and small appliances such as irons and vacuum cleaners are set to become costlier by 3-5%** from July since these **will fall in the 28% GST bracket, thereby increasing the tax load.**

- Retailers offered the **maximum discount of 40-45% on open box stock** — goods that had been on display.

- Chennai-based Viveks chief executive BA Srinivasa said the **chain's 45 stores have reported a 40% jump in sales in the last two weeks.**

Pre-GST offers ensure leading consumer electronic retail chains rake in the moolah

- Vijay Sales managing director Nilesh Gupta said **"However, it's not profitable growth as bulk of the merchandise was sold on discounts,"** he said.
- Also, the **industry now fears July could be a washout since several consumers advanced purchases**. **Sentiment will be further deterred if prices rise as expected.**
- Incidentally, **primary sales dropped 25% in June as retailers wanted to clear old stock to reduce losses on transitional inventory after the GST rollout**. Companies have **agreed to compensate the trade only for stock that's 30-60 days old.**
- Panasonic India CEO Manish Sharma said **primary sales to retailers from companies should pick up from the third week of July as liquidity has increased.**

Analysis:

- Decrease in price has made change in the quantity demanded for the goods.
- Also the future expectation of price rise due to increase in tax(GST) has pushed the sales today.

Determinants of Demand

Internal Factors

1. **Price of goods and services($P_{g_{\&}s}$)** The price of the product depends on the cost of production, which in turn will determine the quantity that will be purchased by the consumer. The higher the price, the lower the demand.
2. **Service policies or terms of payment(S_p)** Better customer service and terms of payment by credit instead of cash will increase sales. If Pizza Hut, for example, offers better customer service compared to other fast food outlets, customers would prefer to go to Pizza Hut and this increases the demand for this product.
3. **Profit margin(π)** A higher profit margin will lead to an increase in the price of the product and reduce its demand, and vice versa.

Generalized Demand Function: Multivariate Demand Function

$$Q_{dd} = \alpha - \beta_1 P_{g_{\&}s} + \beta_2 S_p - \beta_3 \pi$$

Determinants of Demand

External Factors

1. Price of related goods: The demand for a product is also affected by a change in the price of related goods.

Related goods fall into two categories:

a) Price of Substitute goods(P_s) are goods or services that can be used *in place of* another product or service. For example, a bus ride versus an rail ride; tea versus coffee; apples versus oranges, and so on.

- A change in the price of a substitute product affects the demand for the product in the *same* **direction** in which the price changes. Demand for a product will increase, if the price of a substitute product rises, and vice versa. When the price of coffee increases, for example, the quantity demanded for coffee will fall (as per the law of demand) and people will look for an alternative. Thus, the demand for tea, for example, will increase.

$$P_{Coffee} \uparrow \; Q_{DD\ Coffee} \downarrow \; DD_{Tea} \uparrow$$

Case 3

Case of Substitute Products:

Diesel car sales pie halves to 26% in four years

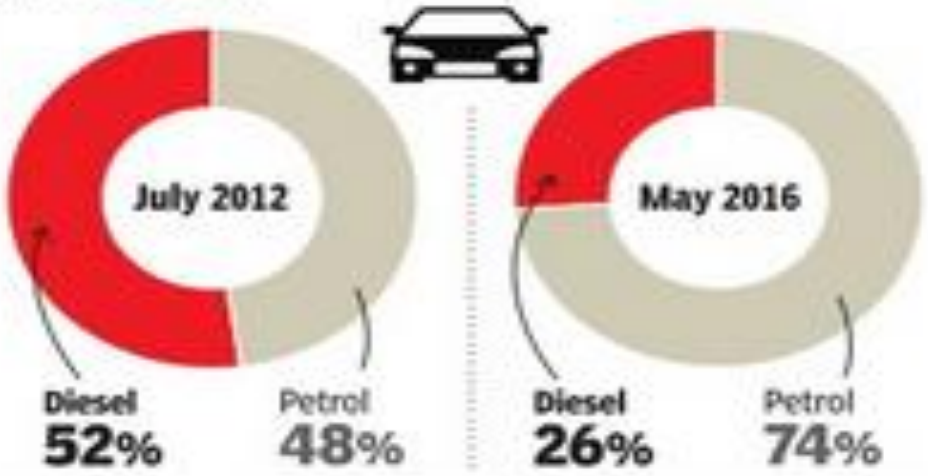
By *Pankaj Doval*, TNN | Updated: Jul 05, 2016, 10.50 AM IST

From nearly one in every two cars sold around four years back, the share of diesel cars in total sales has now come dowr. to just a quarter -or one in four.

DESCENT OF DIESEL

Share of diesel in overall car sales has fallen to half...

(share in car sale)



... as difference in the running cost has fallen steeply

Running cost in ₹/km

It took **3 years** to recover the extra cost of buying a diesel hatchback car over its petrol variant in July 2012. Today that period has gone up to **4 years and eight months***

*Assuming ₹1 lakh extra price for diesel car, annual mileage of 12,000 kilometres and average fuel consumption of 14/kmpl for petrol and 19/kmpl for diesel

Source: Siam, Indian Oil Website, Company Data

Case 3

Case of Substitute Products:

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From nearly one in every two cars sold around four years back, the share of diesel cars in total sales has now come down to just a quarter -or one in four.

- From nearly **one in every two cars sold around four years back**, the share of diesel cars in total sales has **now come down to just a quarter -or one in four**.
- The narrowing gap in **retail fuel prices of petrol and diesel has been one of the most significant reasons** behind this trend. The recent action against diesel cars over environmental concerns, especially the **Supreme Court ban on larger diesel engines (above 2,000cc) in the volume-laden Delhi-NCR**, is another key reason behind demand shifting towards petrol models.

Case of Substitute Products:

Diesel car sales pie halves to 26% in four years

By *Pankaj Doval*, TNN | Updated: Jul 05, 2016, 10.50 AM IST

From nearly one in every two cars sold around four years back, the share of diesel cars in total sales has now come down to just a quarter -or one in four.

- Fall in diesel car sales has led to **inventory build-up at dealerships, forcing companies to offer discounts and freebies to clear stocks**. Industry officials say the trend is here to stay as car replacement cycles get shorter (around four to five years) in bigger cities and it takes longer to recover the extra cost that one pays for a diesel variant -Rs 1lakh more for a hatchback. According to numbers from industry body Society of Indian Automobile Manufacturers (Siam), diesel accounted for 26% of total car sales in May this year. "This is quite a fall, considering that the contribution of diesel variants was as high as 52% just four years back," says Sugato Sen, deputy DG at Siam.
- The gap between diesel and petrol prices has been narrowing after the **government's decision to de-control fuel prices, which has led to withdrawal of subsidy on diesel**. Against **a difference of Rs 27.2 in July 2012**, the price gap between **the two fuels has now come down to Rs 10,** considering the retail price in Delhi.

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- This means the **difference in per-kilometre running cost between petrol and diesel variants has reduced from Rs 2.72 four years back -when diesel demand was at its peak -to Rs 1.75 now** (if one takes an average fuel efficiency of 14 kmpl for a petrol hatchback and 19 kmpl for a diesel variant). While the per-kilometre running cost for a petrol variant has come down (Rs 4.62 against Rs 4.89 in July 2012), per-kilometre running cost for diesel variant has gone up (Rs 2.87 against Rs 2.17).

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- "In spite of the highly evolved diesel technology , the car market is witnessing a preferential shift towards petrol (variants) with narrowing of price differential between petrol and diesel fuels," says Rakesh Srivastava, senior VP (sales & marketing) at Hyundai India. Honda has seen a sharp slide in sales. "The consumer sentiment has changed sharply and we could see an immediate drop in enquiries (for diesel variants) at dealerships," Honda Car India senior VP (sales & marketing) Jnaneswar Sen said.

Analysis:

- In this case, the price of petrol decreases then the demand for petrol car increases and demand for diesel car decreases in 2016. When the price of petrol was high in 2012 compared to diesel, customer preferred diesel car. Hence a petrol car and diesel car is substitute products to each other.

Determinants of Demand

b) Price of Complementary goods(P_c) are goods that are used in conjunction with another product.

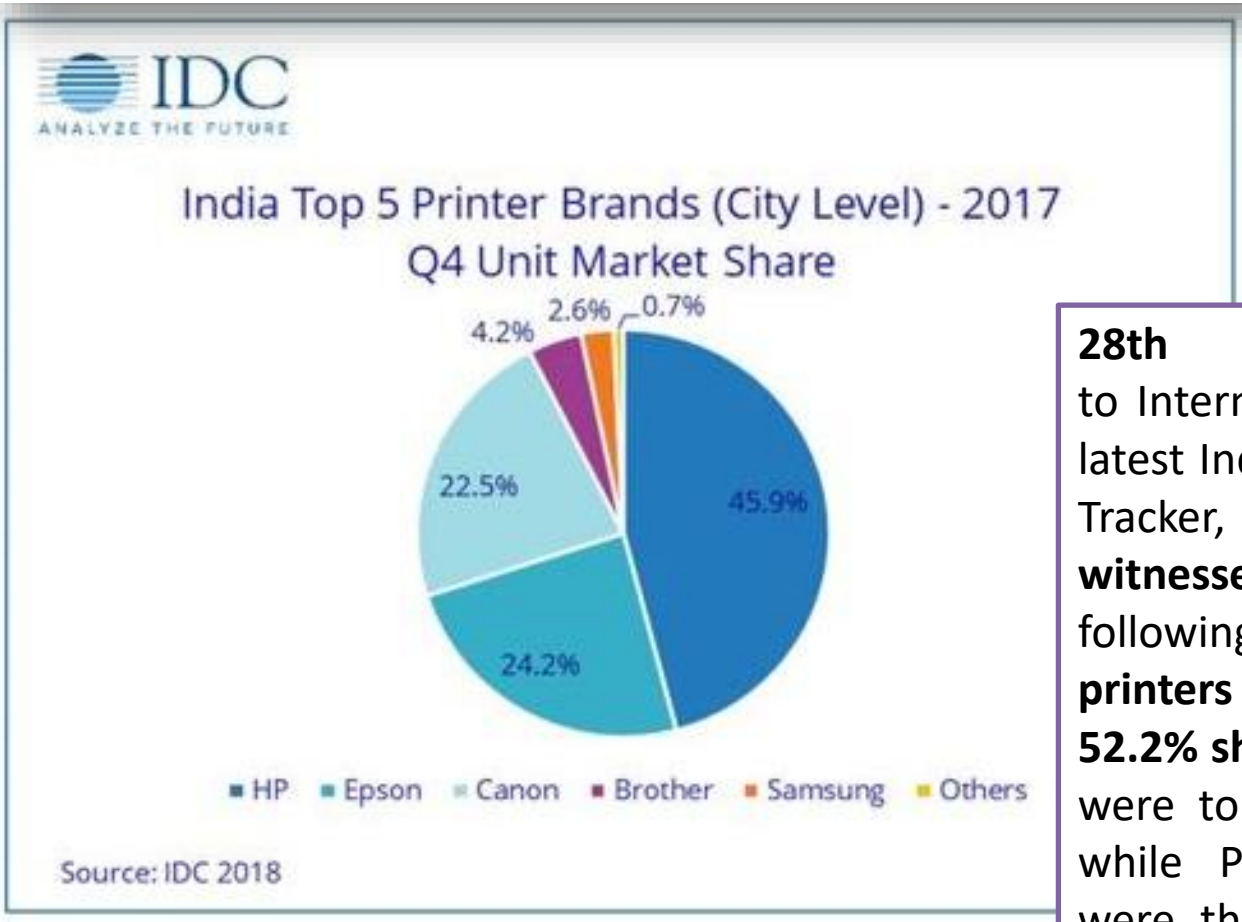
- For example, a disk and a computer; pen and ink; bread and butter.
- The change in the price of a complementary product affects the demand for the product in the **opposite direction** to the price change. Demand for the product will decrease, if the price of complementary goods rises, and vice versa. For example, when the price of pens increases, the quantity demanded for pens will fall (as per the law of demand) and demand for ink will also decrease as both goods are used together.

$$P_{Pen} \uparrow \; Q_{DD\ Pen} \downarrow \; DD_{Ink} \downarrow$$

Case 4

Printer Market Declined in Major 50 Cities by 17.5% in Q4 2017 After a Momentous Q3, Reveals IDC Report

28 Feb 2018



28th February 2018: According to International Data Corporation's (IDC) latest India Monthly City-Level A4 printer Tracker, Printer market in major **50 cities witnessed a decline of 17.5% in Q4 2017** following a strong Q3 2017. **Inkjet printers led the overall market with 52.2% share.** Mumbai, Delhi and Chennai were top three cities in terms of sales while Pune, Vadodara and Bangalore were the major growth markets in Q4 2017 with an **average growth of 19.1%.**

Although Q4 2017 **witnessed decline due to mitigation of post GST impact for accounting transparency**, both vendor and channel partners pushed the sales through channel schemes and end user promotions across major markets along with regular channel expansion program. According to **Abhishek Mukherjee**, Senior Market Analyst, IDC India **"Low cost of ownership and printing compared to Laser printers account for the increasing uptake of Inkjet printer category".**

HP Printing Q2 FY18, Revenue and Operating Profit

Printing

Q2 FY18

Revenue

$5.2 billion

▲ 11% y/y ▲ 9% CC[1]

Operating profit

$839 million

16.0% of revenue

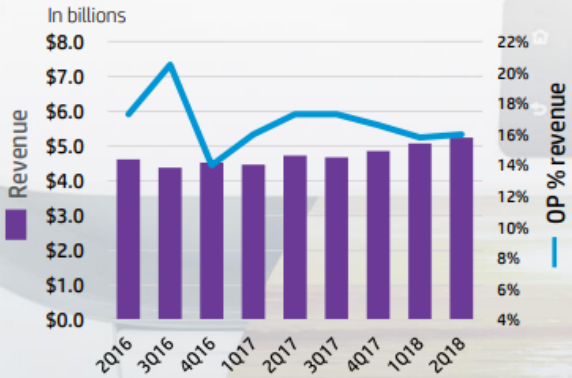
Key messages

- Continued y/y revenue growth in hardware and supplies
- Revenue growth in strategic areas: A3, Graphics, MPS[2] and Instant Ink
- Investment in hardware placement drove strong unit growth
- 3D momentum with new partners and materials
- Innovation: Next gen A3 LaserJet portfolio, LaserJet Pro M15 and M28, HP's smallest laser printer; and announced printers with voice support

Revenue breakdown

- Supplies 65%
- Commercial[3] Hardware 23%
- Consumer[3] Hardware 12%

Revenue and OP % trend



Key metrics

- Supplies revenue up 8% (6% CC[1]) y/y
- Total Hardware units up 13% y/y
- Commercial[3] Hardware units up 88% y/y
- Consumer[3] Hardware units up 4% y/y

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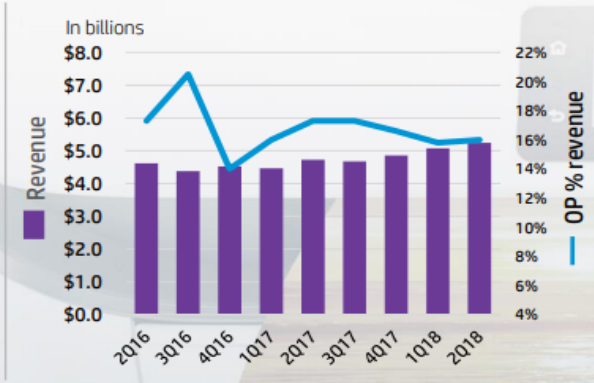

Key metrics

Supplies revenue up 8% (6% CC[1]) y/y

Total Hardware units up 13% y/y

Commercial[3] Hardware units up 88% y/y

Consumer[3] Hardware units up 4% y/y

Analysis: In this case, HP deliberately keeps the price of printer low in order to increase the demand for cartridges. HP is earning 65% of revenue by selling complimentary product i.e. cartridges.

Determinants of Demand

2. Consumers' income

Other things being equal, when ***income increases,*** *consumers' demand for more goods and services will increase.*

- Goods that increase in demand as income increases are **normal goods(CI_{ng}),** such as cars, shirts and books.
- Goods that decrease in demand as income increases are **inferior goods(CI_{ig}),** such as low-grade rice, low-grade potatoes and used cars.

Inferior Goods

A product that decreases in demand with an increase in income.

Normal Goods

A product that increases in demand with an increase in income.

Determinants of Demand

3. Consumers' fashion, tastes and preferences(C_{ftp})

- Tastes and fashions of consumers change significantly. If a product becomes more fashionable, the demand for it will increase and if the same product becomes outdated, the demand for it will fall. As tastes and fashions change, demand will also change. For example, changes in music, fashion trends or recreation.

4. Population or number of buyers(N)

- Demand depends on the size of the total population or the number of buyers in the market. A larger population with a high rate of growth creates a greater demand for goods and services. The composition of the population, i.e. a proportion of young and old or adults and children; a ratio of men and women, etc, will all affect demand. When the population in Segamat increases, for example, the demand for houses, bus services, and other goods and services will also increase. Countries with high populations, suchas China (1,343,239,923 people), India (1,205,073,612 people) and the United States (313,847,465 people), have a very high demand for goods and services (Internet World Stats, 2012).

Determinants of Demand

5. Expectation about future prices(P_e)

- The higher the expected future price of a product, the higher the current demand for that product, and vice versa. For example, when the government plans to increase the price of sugar the following week, the present demand for sugar will immediately increase—consumers would want to store for future use due to the expected price hike. If consumers expect the price of cars to fall next year, the present demand for cars this year will decrease, because consumers will wait for the price to fall.

6. Advertisements(A)

- Advertised goods normally have a higher demand because of awareness. Consumers will only buy goods and services when they are aware of the existence of those products. Advertisements will attract people to the goods and services. For example, soft drink advertisements in India which carry endorsements by celebrities attract many consumers to buy the product.

Determinants of Demand

7. Festive seasons and climate(F_{sc})

- During festive seasons, different products will be in high demand. For example, during Chinese New Year, the demand for mandarin oranges will be greater, whereas during the Diwali festivities, the demand for sugar will be greater.

8. Level of taxation(T_{ax})

- The higher the taxes, the lower the purchasing power of consumers, and vice versa. This will lead to a decrease in demand. For example, if the government reduces income tax by 10%, consumers will have more money to spend on goods and services. This increases the demand for good and services.

9. Supply of money in circulation(S_m)

- The larger the supply of money in circulation, the greater the demand for goods and services, because consumers have more money to spend.

Case 5

Losing appetite: Top restaurants, cafes in a pickle in FY18

While 16 restaurant biz expanded their combined sales by 17% to Rs 4,740 cr,13 of them were still in the red.

By *Sagar Malviya*, *Ratna Bhushan*, ET Bureau | Updated: Jan 19, 2019, 09.07 PM IST

Losing Appetite

Companies	Brands	2018 Net Sales	Loss (₹ Cr)
Burger King	BURGER KING	389	-62
Azure Hospitality	MAMAGOTO, DHABA	117.59	-41.58
Mountain Trail Foods	CHAIPOINT	90.5	-39.5
Degustibus Hospitality	INDIGO, TOTE	85.7	-23.2
Poncho Hospitality	BOX 8	81.9	-18.1
Bistro Hospitality	TGIF	76	-16
Impresario Entertainment and Hospitality	SMOKE HOUSE DELI	280	-15.5

In November 2017, the **government scrapped input tax credit (ITC), which accompanied a cut in GST to 5% from 18% for restaurants**. Despite the relief, this move effectively lifted **capital expenses and rentals by 15-18%, according to the industry.**

Losing appetite: Top restaurants, cafes in a pickle in FY18

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"There is a direct impact of 5-10% to the bottom line due to removal of ITC and **we can't arbitrarily pass it to consumers due to market forces and competition from cloud kitchens,**" said NRAI president Rahul Singh.

Earlier this month, the association had raised concerns over food aggregators such as Swiggy and Zomato turning consumers into "discount addicts" and **setting up centralised kitchens in competition with restaurants**.

The eating-out market in India, dominated **by unorganised players, is expected to reach $131 billion by 2022. Total sales in the quick service restaurant (QSR) segment is estimated to grow 9.2% to $21.6 billion** by then, according to Euromonitor data.

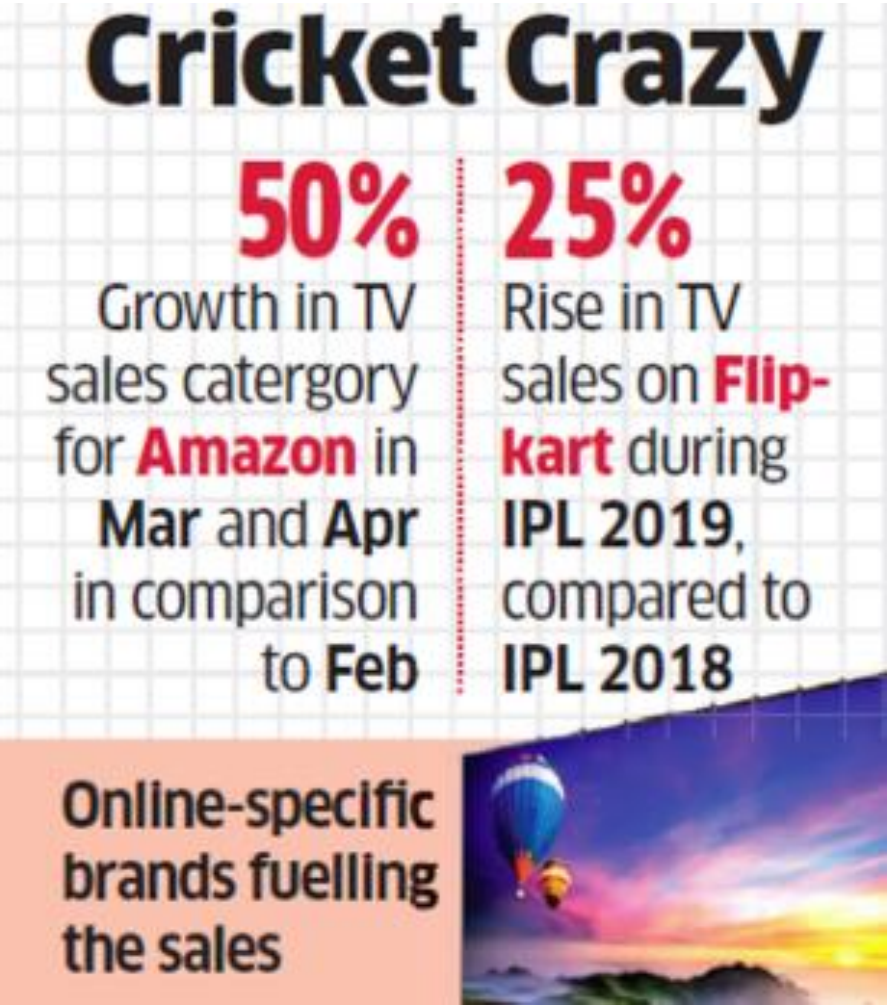
Analysis: Level of taxation(Tax) has an inverse relationship with demand. As an increase in the GST rates the prices of services increases(cost of production increases and ultimately increase in the selling price) and demand decreases. Companies are incurring losses due to decrease in demand because of the increase in tax.

Case 6

TV sales roll on World Cup pitch

Both e-tailers, Amazon and Flipkart, have seen a spike in the sales of large-screen televisions.

By *Varun Jain*, ET Bureau | Jun 06, 2019, 07.19 AM IST



Sales of television sets on ecommerce platforms Amazon India and Flipkart have grown significantly on the back of cricketing events like IPL and the ongoing World Cup.

For **Amazon, the category has grown 50% in each of March and April**, compared with what it sold in February this year, said Garima Gupta, category leader-TVs at the Indian unit of the US-based company. A **Flipkart spokesperson said the e-tailer had witnessed a 25% increase in television sales during IPL 2019 versus IPL 2018**, with a predictable spike in the South, likely due to Chennai Super Kings progressing to the final of the tournament.

TV sales roll on World Cup pitch

Both e-tailers, Amazon and Flipkart, have seen a spike in the sales of large-screen televisions.

By *Varun Jain*, ET Bureau | Jun 06, 2019, 07.19 AM IST

- **32-inch TV is the top selling among all screen sizes but 55-inch and above screen sizes are growing at the fastest pace. Xiaomi, Samsung, LG, Micromax and Kevin are the top-five television brands on the ecommerce company's platform based on sales.**
- People in small towns such as **Beed and Sangli in Maharashtra**; **Ramanagar in Karnataka**; **Bandia in Uttarakhand**, **Nimbahera in Rajasthan and Shahdol and Sendhwa in Madhya Pradesh are buying televisions from Amazon**, its executive said.
- According to an industry expert, the **average price range of televisions bought on ecommerce platforms is Rs 20,000-25,000.** Online-specific brands which are priced way below Samsung, LG and Sony are also fuelling the sales of televisions, said another analyst.

Analysis: World cup and IPL 2019 these two events are creating demand for TV. We conclude that the demand for TV increases because of an independent variable i.e. big sports event or new sports season.

Case 7

Sluggish economy and subpar monsoon may affect India's adex growth in second half

With the economy slowing down and monsoon being below expectations so far, India's advertising expenditure may take a hit. The media industry now hopes that the budget would accelerate growth for the remaining year

Swagata Panjari
Mumbai, July 01, 2019

BEST MEDIA INFO

- **Generally, advertisers are aggressive towards the second half of the year as it is loaded with the festival and holiday seasons.** The **ad market witnesses heavy spend as most brands keep a set budget for these regular activations every year.**
- But **this year**, the market might **witness some change in its brand activation as the first half of 2019 was filled with three marquee events — the Indian Premier League, the World Cup and the General Elections**.
- The **optimism of the first half of the calendar year may not be carried to the second half given that economic growth has slowed down and the monsoon is not picking up according to expectations**. **This in turn may adversely affect India's advertising expenditure.**
- The media industry now pins its hopes on the **upcoming budget to accelerate growth for the remaining year.**

Sluggish economy and subpar monsoon may affect India's adex growth in second half

With the economy slowing down and monsoon being below expectations so far, India's advertising expenditure may take a hit. The media industry now hopes that the budget would accelerate growth for the remaining year

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BEST MEDIA INFO

» According to a Dentsu Aegis Network report, **advertising spend in India is likely to rise by 11.4% to Rs 697 billion in 2019.** Whereas despite TRAI's NTO, **television will continue to be the dominant force in India and is estimated to contribute 39% of the total ad spend in 2019.** Television is forecasted to expand in 2019 by 9.5% to touch Rs 27,140 crore.

Monsoon and economic growth to determine ad spends

» Most advertisers said **ad-spend calibration will take place more on the basis of the monsoon and the country's economy;** and not on the three events that took place in the first half. According to the advertisers, the **slowdown in the economy is the deciding factor, which is the reason why there weren't too many brands investing in the first half of 2019 as they were in a wait-and-watch situation.**

Analysis: A slowdown in the economy is the deciding factor for advertisement expenditure, which indicated low demand in the market hence less advertisement expenditure. It shows advertisement expenditure as an independent variable has the power to affect the demand in the market.

Generalized Demand Function: Multivariate Demand Function

$$Q_{dd} = \alpha - \beta_1 P_{g_{\&}s} + \beta_2 S_p - \beta_3 \pi + \beta_4 P_s - \beta_5 P_c + \beta_6 CI_{ng} - \beta_7 CI_{ig} + \beta_8 C_{ftp} + \beta_9 N + \beta_{10} P_e + \beta_{11} A + \beta_{12} F_{SC} - \beta_{13} T_{ax} + \beta_{14} S_m$$

Where,

1. $(P_{g_{\&}s})$ = Price of goods and services
2. (S_p) = Service policies or terms of payment
3. (π) = Profit margin
4. (P_s) = Substitute goods
5. (P_c) = Price of Complementary goods
6. (CI_{ng}) = Consumers' income (normal goods)
7. (CI_{ig}) = Consumers' income (inferior goods)
8. (C_{ftp}) = Consumers' fashion, tastes and preferences
9. (N) = Population or number of buyers
10. (P_e) = Expectation about future prices
11. (A) = Advertisements
12. (F_{sc}) = Festive seasons and climate
13. (T_{ax}) = Level of taxation
14. (S_m) = Supply of money in circulation

- $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9, \beta_{10}, \beta_{11}, \beta_{12}, \beta_{13}$ & β_{14} are slope of the parameters.
- Measure effect on Qdd of changing one of the variable while holding the others constant.
- Positive sign indicates direct relationship.
- Negative sign indicates inverse relationship.

Generalized Demand Function: Multivariate Demand Function

Independent Variable	Relation to Q_{dd}	Sign of Slope Parameter
($P_{g\&s}$) = Price of goods and services	Inverse	$\beta_1 = {}_{\Delta}Q_{dd}/_{\Delta}P_{g\&s}$ is negative
(S_p) = Service policies or terms of payment	Direct	$\beta_2 = {}_{\Delta}Q_{dd}/_{\Delta}S_p$ is positive
(π) = Profit margin	Inverse	$\beta_3 = {}_{\Delta}Q_{dd}/_{\Delta}\pi$ is negative
(P_s) = Substitute goods	Direct	$\beta_4 = {}_{\Delta}Q_{dd}/_{\Delta}P_s$ is positive
(P_c) = Price of Complementary goods	Inverse	$\beta_5 = {}_{\Delta}Q_{dd}/_{\Delta}P_c$ is negative
(CI_{ng}) = Consumers' income (normal goods)	Direct	$\beta_6 = {}_{\Delta}Q_{dd}/_{\Delta}CI_{ng}$ is positive
(CI_{ig}) = Consumers' income (inferior goods)	Inverse	$\beta_7 = {}_{\Delta}Q_{dd}/_{\Delta}CI_{ig}$ is negative
(C_{ftp}) = Consumers' fashion, tastes and preferences	Direct	$\beta_8 = {}_{\Delta}Q_{dd}/_{\Delta}C_{ftp}$ is positive
(N) = Population or number of buyers	Direct	$\beta 9 = {}_{\Delta}Q_{dd}/_{\Delta}N$ is positive
(P_e) = Expectation about future prices	Direct	$\beta 10 = {}_{\Delta}Q_{dd}/_{\Delta}P_e$ is positive
(A) = Advertisements	Direct	$\beta 11 = {}_{\Delta}Q_{dd}/_{\Delta}A$ is positive
(F_{sc}) = Festive seasons and climate	Direct	$\beta 12 = {}_{\Delta}Q_{dd}/_{\Delta}F_{SC}$ is positive
(T_{ax}) = Level of taxation	Inverse	$\beta_{13} = {}_{\Delta}Q_{dd}/_{\Delta}T_{ax}$ is negative
(S_m) = Supply of money in circulation	Direct	$\beta 14 = {}_{\Delta}Q_{dd}/_{\Delta}S_m$ is positive

Changes in Quantity Demanded Vs. Changes in Demand

Changes in determinants of demand influence consumers' purchasing plans. This causes a movement or shift in the demand curve.

Change in Quantity Demanded

Occurs when the price of a product changes and there is movement along the demand curve, ceteris paribus.

- If the prices of products change and other factors are constant, there will be a movement along the demand curve. In Figure (a), when the price is at Rs.20, the quantity demanded **is 10** units. When the price increases to Rs.30, the quantity demanded falls from 10 units to 5 units. The ***movement along the demand curve*** from Rs.20 and 10 units (point b) to Rs.30 **and** 5 units (point a) illustrates the ***change in quantity demanded.***

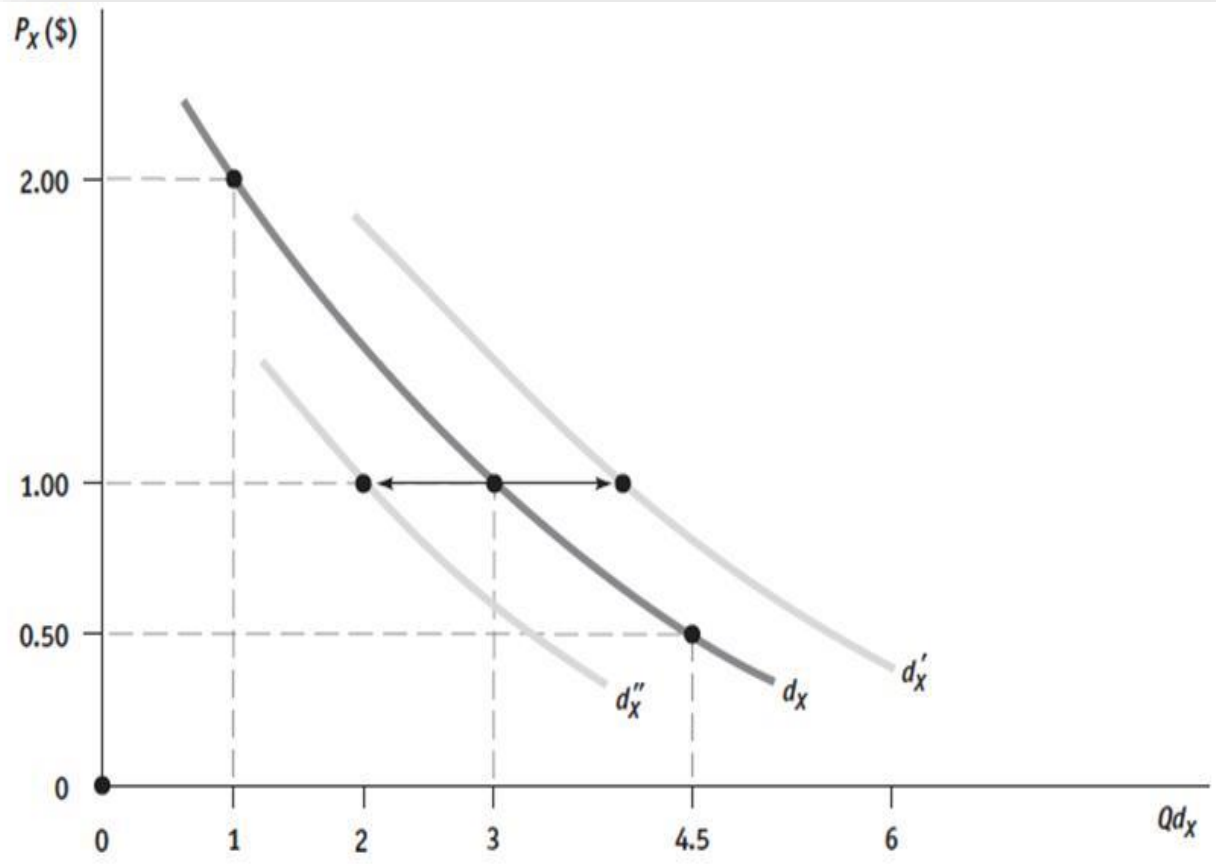
Changes in Quantity Demanded Vs. Changes in Demand

Change in quantity demanded

- Occurs when price changes
- Movement along demand curve

Change in demand

- Occurs when one of the other variables, or *determinants of demand*, changes
- Demand curve shifts rightward or leftward

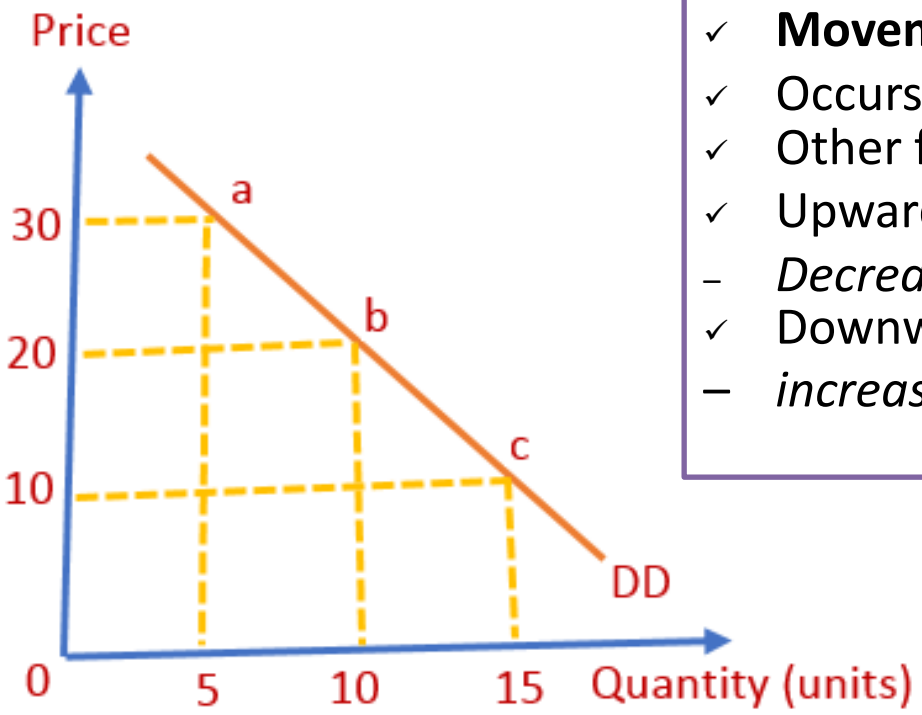


An Individual's Demand Curve for Commodity *X* At the price of $2, the individual purchases 1 unit of the commodity per time period. At P_X = $1, the individual purchases 3 units of *X*, and at P_X = $0.50, Qd_X = 4.5. The inverse relationship between P_X and Qd_X (negative slope of d_X) is called the "law of demand." d_X shifts to the right, say, to d'_X, with an increase in the consumer's income, in the price of a substitute commodity, in tastes for the commodity, and with a reduction in the price of a complementary commodity. d_X shifts to the left, say, to d''_X, with the opposite changes.

Changes in Quantity Demanded Vs. Changes in Demand

An upward movement along the demand curve	→	**Decrease in quantity demanded**
(See example from point b to point a)		(Contraction of demand)

A downward movement along the demand curve	→	**Increase in quantity demanded**
(See example from point b to point c)		(Expansion of demand)



(a) Changes in quantity demanded

- ✓ **Movement** along the demand curve
- ✓ Occurs when ***price of a product changes***
- ✓ Other factors constant
- ✓ Upward movement
- – *Decrease in quantity demanded (contraction)*
- ✓ Downward movement
- – *increase in quantity demanded (Expansion)*

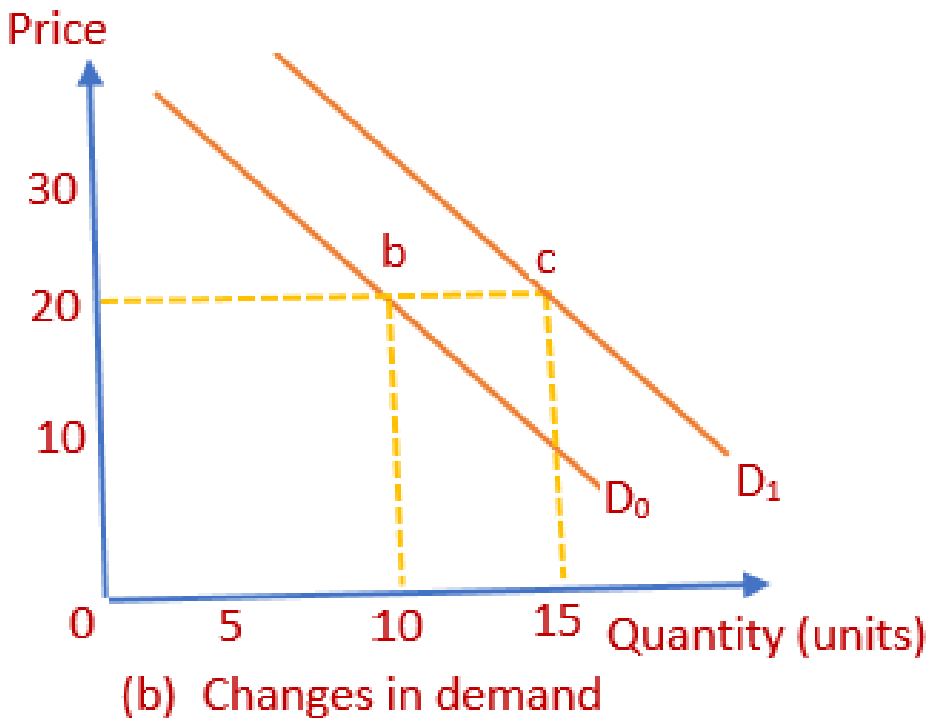
Changes in Quantity Demanded Vs. Changes in Demand

Change in Demand

Occurs when other factors change but the price of a product is constant and the demand curve shifts.

- If the price of a product is constant and other factors *(refer to* previous topic, Determinants of Demand) change, there will be a ***shift of the demand curve***.
- When the population or number of buyers increases, the demand curve will shift from D_o to D_I *(see* Figure (b)).
- When the price is Rs.20 on D_o (point b), the quantity demanded is 10 units and at the same price on D_I (point c), the quantity demanded is 15 units.

Changes in Quantity Demanded Vs. Changes in Demand



(b) Changes in demand

- ✓ **Shift** in the demand curve
- ✓ Occurs when there are *changes in other factors* such as population, income, price of related goods, etc.
- ✓ Price of a product remains constant
- ✓ Increase in Demand ($D_o \rightarrow D_1$)

Demand curve shifts to right If

1 *Price of substitute goods increases*
2 *Price of complement goods decreases*
3 *Income increases (normal goods)*
4 *Expected future price increases*
5 *Number of buyers increase*

- ✓ Decrease in Demand ($D_1 \rightarrow D_o$)

Demand curve shifts to left it

1 *Price of substitute goods decreases*
2 *Price of complement goods increases*
3 *Income decreases (normal goods)*
4 *Expected future price decreases*
5 *Number of buyers decrease*

Examples

Explain whether each of the following events represents (i) a ***shift of* the demand curve** or **Change in demand** (ii) a **Change in quantity demanded.**

a) A store owner finds that customers are willing to pay more for umbrellas on rainy days.

b) When XYZ Telecom, a long-distance telephone service provider, offered reduced rates on weekends, its volume of weekend calling increased sharply.

c) People buy more long-stem roses the week of Valentine's Day, even though the prices are higher than at other times during the year.

d) A sharp rise in the price of petrol leads many commuters to join public transport in order to reduce their petrol purchases.

Answers

a) The quantity of umbrellas demanded is higher at any given price on a rainy day than on a dry day. This is a rightward ***shift of* the demand curve,** since at any given price the quantity demanded rises. This implies that any specific quantity can now be sold at a higher price.

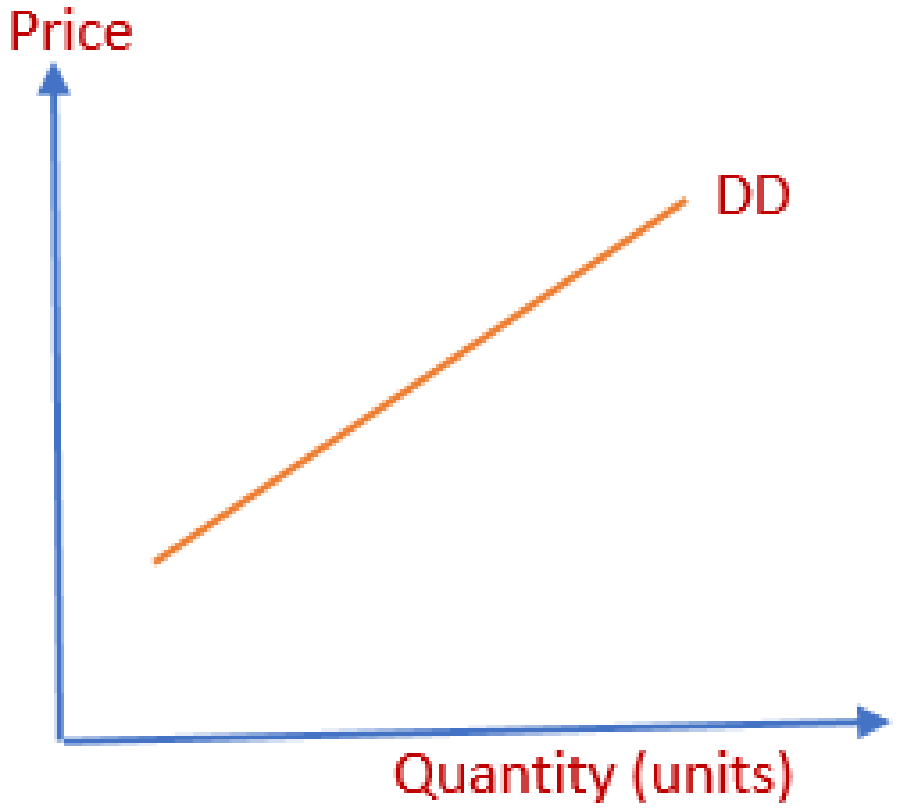
b) The quantity of weekend calls demanded rises in response to a price reduction. This is a ***movement along* the demand curve** for weekend calls.

c) The demand for roses increases the week of Valentine's Day. This is a rightward ***shift of* the demand curve**.

d) The quantity of petrol demanded falls in response to a rise in price. This is a ***movement along* the demand curve**.

Exceptional Demand

The law of demand is a general statement. However, there are a few exceptions to this general rule. This is called an **exceptional demand.**



Exceptional Demand

- Exceptional demand is where as the **price of a product increases**, the **demand for it will also increase**. (The normal demand curve shows that when price increases, quantity demanded will decrease and when price decreases, the quantity demanded will increase.) The demand curve is positively sloped, as shown in Figure.
- Exceptional demand occurs in several instances—**giffen goods, status symbol goods, speculations, emergencies, and highly-priced goods.**

Exceptional Demand

Giffen goods or inferior goods are normally consumed by those in the lower income group.

- This phenomenon was discovered by Sir Robert Giffen and is referred to as the ' Giffen Paradox'.
- It holds that 'Demand is strengthened with a rise in price or weakened with a fall in price'.

$P_{Potatoes}$ ↑ Real Income↓ $Q_{Potatoes}$ ↑

Exceptional Demand

Example: A person from the lower income group spends a major portion of higher income as giffen goods such as potatoes and a smaller portion on other superior commodities or quality products such as meat.

- When the price of potatoes increases, while the price of other products and income remain constant his/her real income (purchasing power) will fall. The monthly income allocated for potatoes will now be smaller than before. So, to avoid starvation, he/she will re-adjust his/her expenditure pattern by reducing the consumption of meat and increasing the quantity of potatoes he/she would buy.

$P_{Potatoes}$ ↑ Real Income ↓ $Q_{Potatoes}$ ↑

Exceptional Demand

When the price of potatoes decreases he/she will buy more meat, instead of more potatoes, since his/her real income has increased. This reduces the demand for potatoes.

$P_{Potatoes}$ ↓ Real Income ↑ $Q_{Potatoes}$ ↓

Exceptional Demand

Veblen's effect or Status Symbol Goods

- It is associated with Thorstein Veblen, a famous American economist. There are products which are purchased by people in the **higher income groups**, **not so much for satisfaction** but for **luxury or to be flaunted**. With such **status symbol goods**, the price is not important as possession of the goods confers a social distinction on the owner.
- Some examples of status symbol goods are jewellery(diamonds or precious stones) world famous paintings or artworks, and so on. When the price of diamonds falls, even those from the lower income group can purchase them. As such, diamonds would no confer any social distinction or prestige. The rich may then stop buying diamonds titter them cheap products. Therefore, the quantity demanded for diamonds will fall(direct relationship).

Exceptional Demand

Speculation

- Price of a product is increasing and is expected to increase further in the near future, the consumer will buy more of the product even at the higher price. In other words, the increase in price does not cause a decrease in quantity demanded, but an increase instead. For example, if consumers in India expect the price of sugar to increase further in another they will purchase more sugar to store. An expectation of an Increase in price will to the quantity demanded.
- Speculators in the stock exchange also display exceptional demand, whereby they will shares if the prices show a rising trend, and vice versa.

Emergencies

- Such as war and natural disasters, people will buy more goods even though the prices of these goods are high. These goods are usually basic necessities, such as salt, rice, sugar and oil.

Exceptional Demand

Highly-priced Goods

- The exceptional demand may also apply to goods that the consumer considers quality or superior goods. Consumers may perceive highly-priced goods as superior products. As such, they will buy more when the price is high and less when the price is low. For example, when the price of a pair of shoes is high, more people will purchase it because they view it as better-quality footwear.

Case 8

Exceptional Demand

Michel Porro | Getty Images

Tim Cook, chief executive officer of Apple

Higher prices will actually boost iPhone demand, not hurt it, Morgan Stanley predicts

Apple's products are so good, they are apparently immune to the normal laws of economics.

- Morgan Stanley on Tuesday **raised its 12- to 18-month price target on Apple to $194 from $182**, as the firm sees the **higher prices as positive**, not a negative like some other research firms on Wall Street.
- **"Innovation-led price increases historically boost, rather than hinder, Apple demand,"** wrote Morgan Stanley analyst Katy Huberty in Tuesday's note to clients.

Higher prices will actually boost iPhone demand, not hurt it, Morgan Stanley predicts

Exceptional Demand

- Her **new price forecast represents 22 percent upside** from Monday's close. Apple's stock is 0.6 percent higher in premarket trading.
- Huberty's raised **her 2018 revenue forecast to $301 billion, 14 percent higher** than the Wall Street consensus.
- Morgan Stanley also noted the **extreme loyalty of Apple customers, which is showing signs of increasing from already high levels.**
- "According to our April 2017 AlphaWise US Smartphone survey, **Ninety-two percent of US iPhone users who plan to upgrade their phone in the next year plan to repurchase an iPhone, up from 86% the year before**."

Analysis: Higher prices will actually boost iPhone demand, not hurt it, shows that the iPhone has positive demand curve i.e. exception to the law of demand.

She explains further:

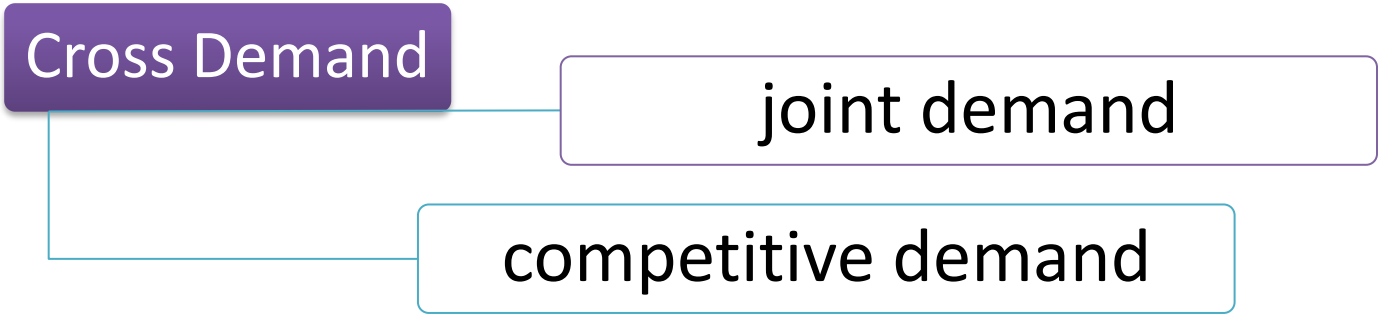
"Apple is an aspirational brand offering high quality, innovative products at a premium price. As a result, the company escapes the typical trend of declining prices that drive demand for other devices. In fact, demand for iPhone is directly correlated to the direction of ASPs - higher prices, higher demand and vice versa."

Interrelated Demand

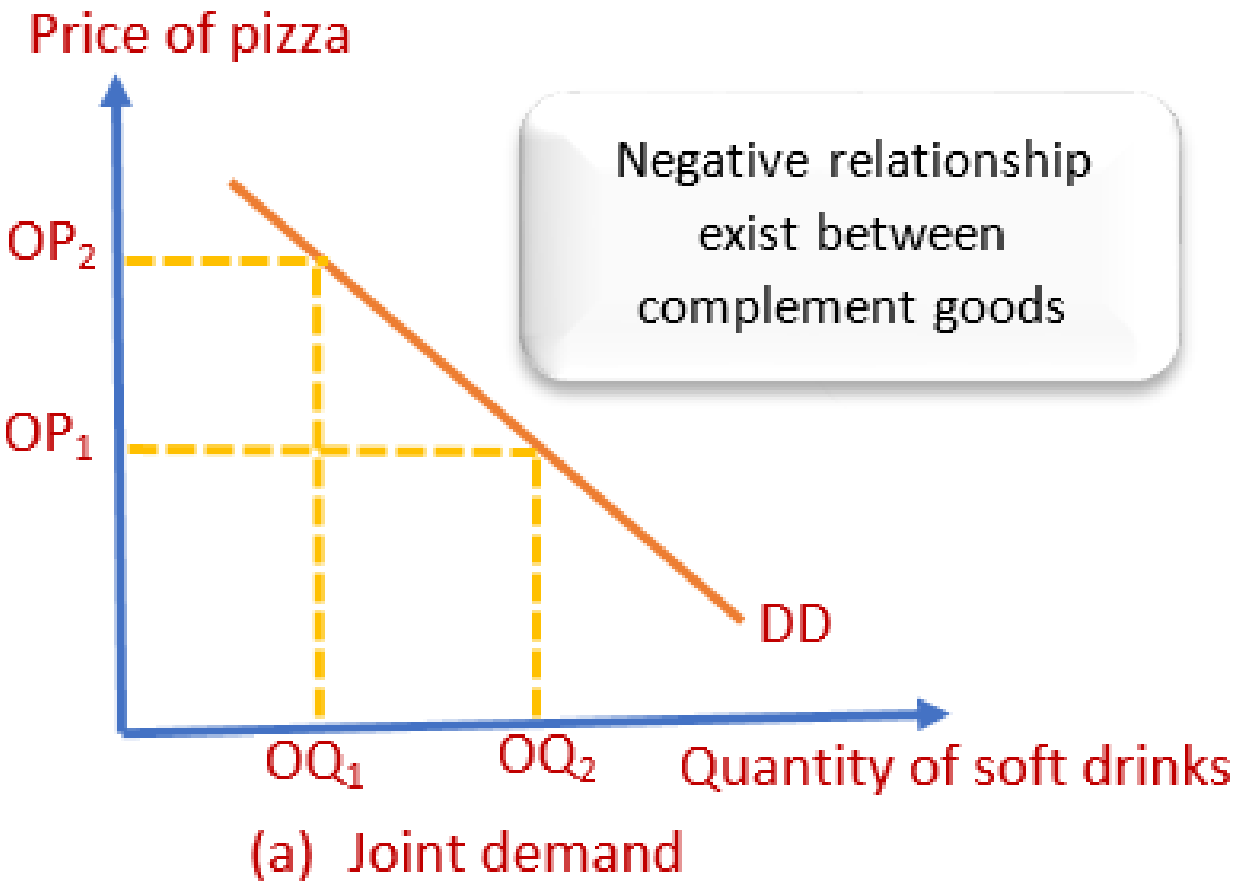
The law of demand assumes that only price and quantity changes and other factors - constant. The following are some examples of interrelated demands.

Cross Demand

- The demand for a good is also affected by the price of its substitute or complementary foods. The relationship between the price of substitute or complementary goods and quantity demanded of a good is what we call **cross demand** which is categorized as **joint demand (applies to complementary goods)** and **competitive demand** (substitute goods).



Interrelated Demand

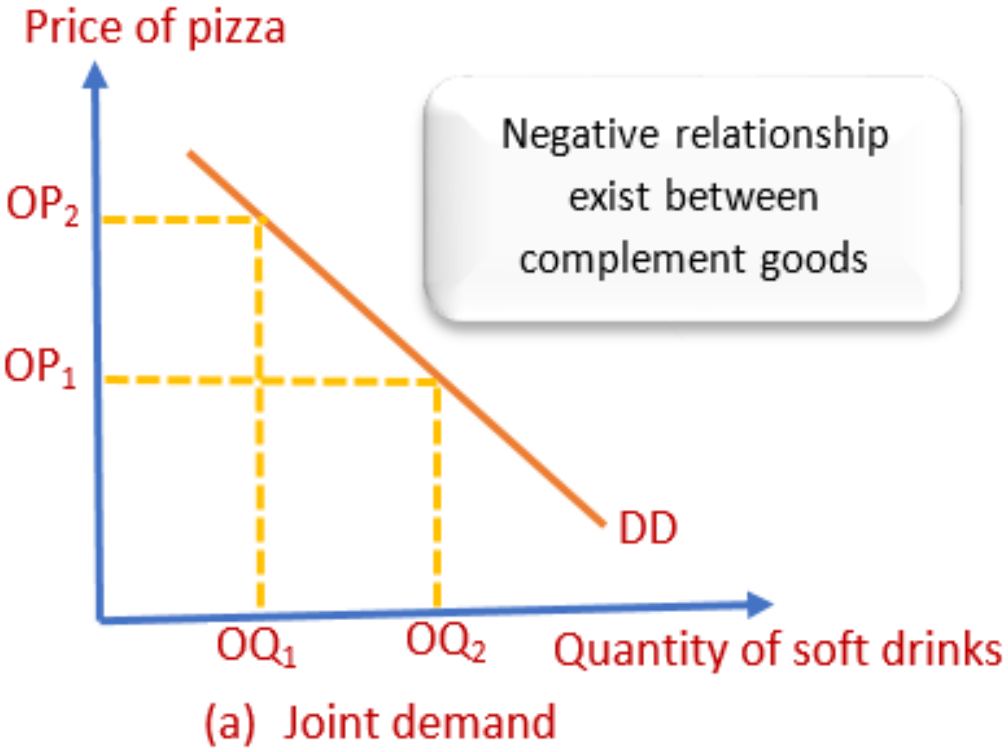


Joint Demand: Applies for the complementary goods where an increase in the price of a complement good decreases the demand for the good.

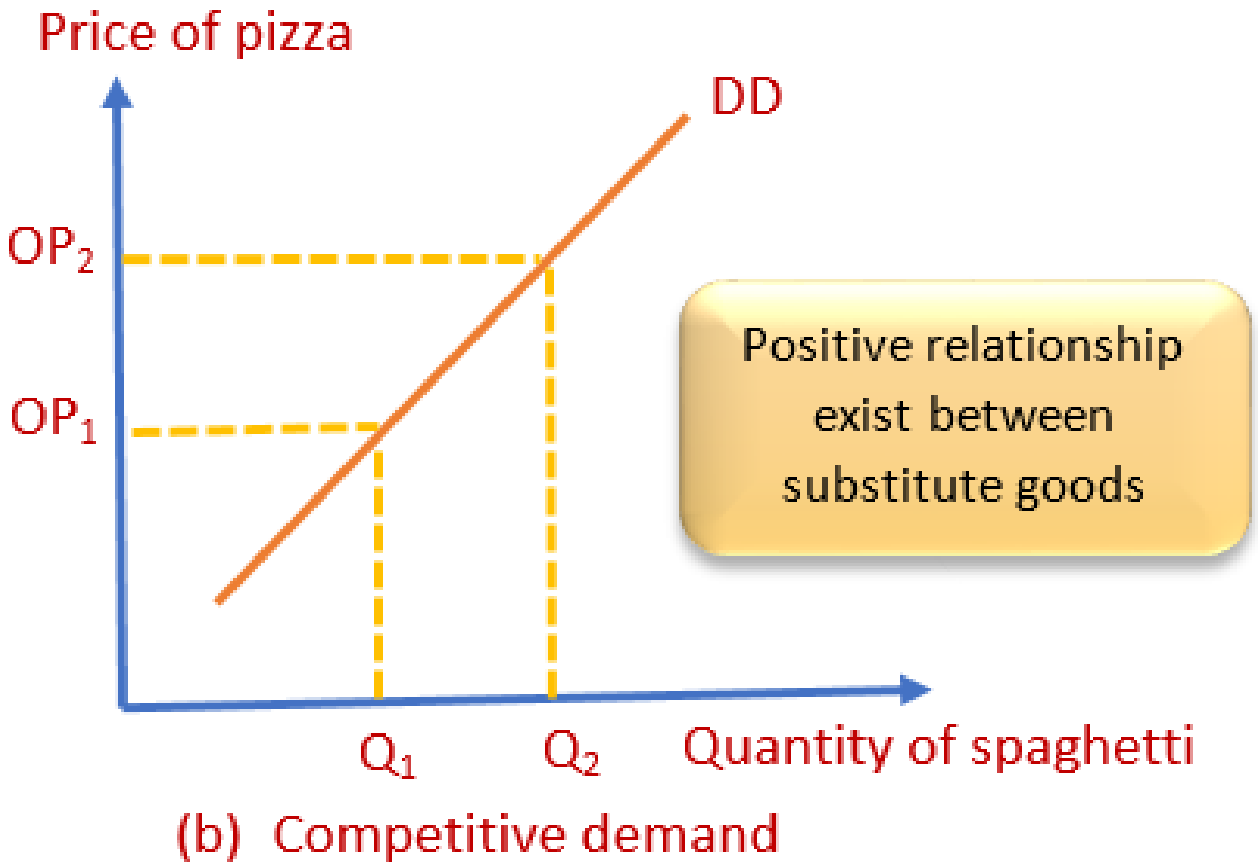
Interrelated Demand

- Let us first look at joint demand for complementary goods, e.g. pizzas and soft drinks.

- Figure (a) illustrates a downward sloping demand curve for pizzas and soft drinks. When the price of pizza increases from OP_1 to OP_2, the demand for soft drinks will decrease from OQ_1 to OQ_2. As the price of pizza rises, people tend to purchase less pizza and reduce the purchase of soft drinks simultaneously.



Interrelated Demand



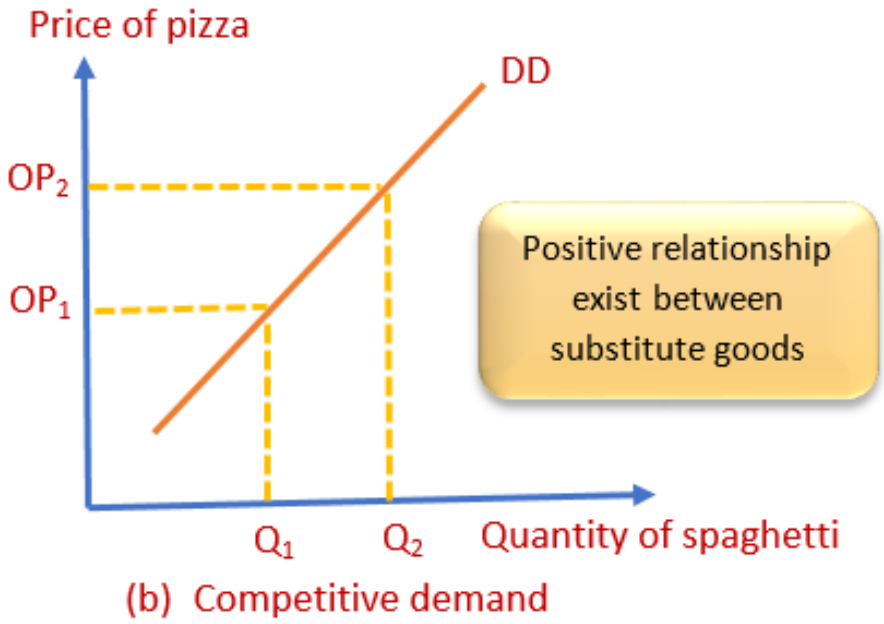
(b) Competitive demand

Competitive Demand: Applies for the substitute goods where an increase in the price of a substitute good, increases the demand for the good.

Interrelated Demand

Competitive demand for substitute goods, e.g. pizzas and spaghetti.

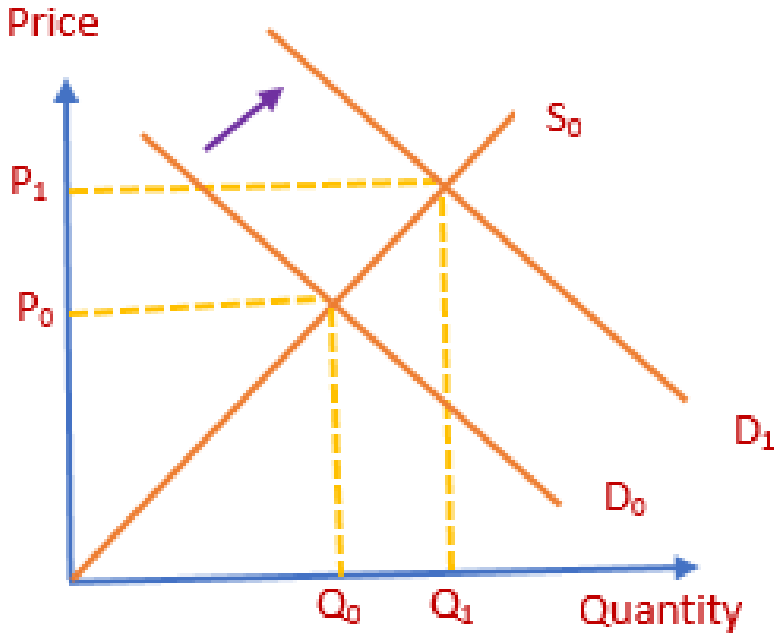
As shown in Figure (b), when the price of pizza rises from OP_1 to OP_2, the demand for spaghetti increases from OQ_1 to OQ_2. When the price of pizza rises, people tend to switch to the substitute good (in this case, spaghetti), and as a result, the demand for spaghetti rises. Therefore, the demand curve for competitive demand is an upward sloping demand curve.



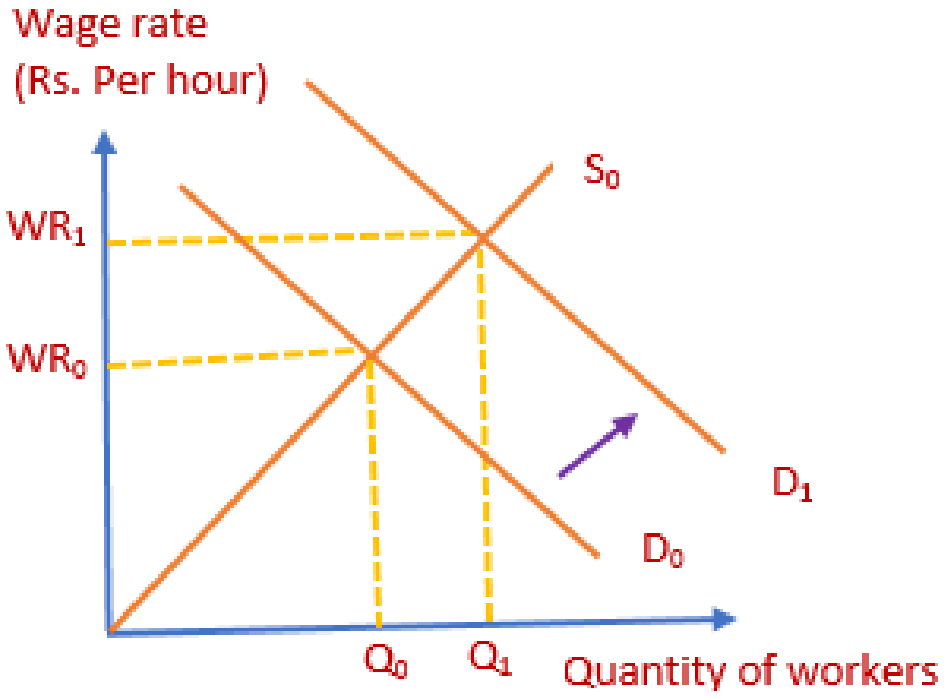
(b) Competitive demand

Derived Demand

Derived demand *is the demand for a good that is dependent on the demand for another related good.*



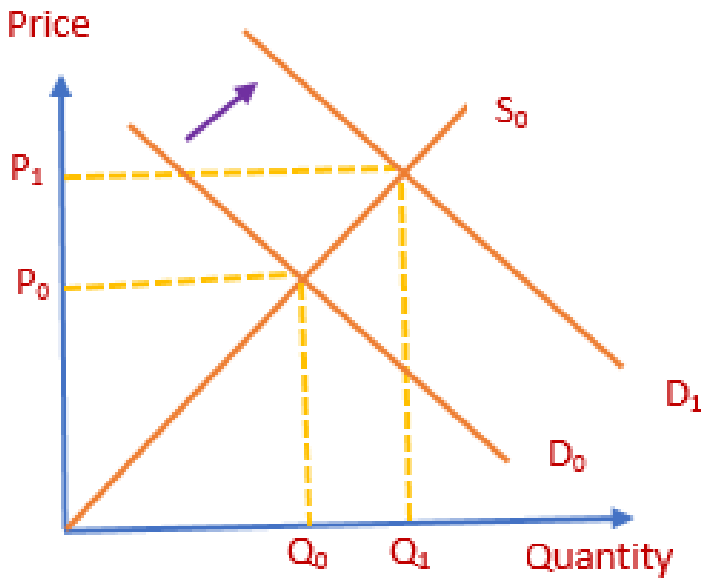
(a) Demand and Supply for houses



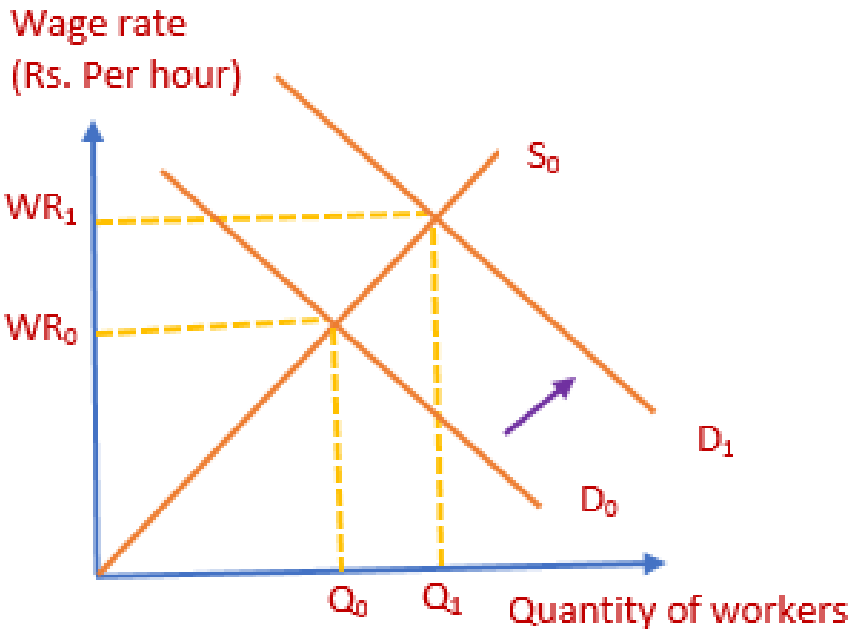
(b) Demand and Supply for carpenters

Derived Demand

- Basically, the demand for factors of production, such as labour, land and capital, is considered a derived demand. In the construction industry, for example, when the demand for houses increases, the demand for construction workers, electricians, carpenters and building materials also increases.



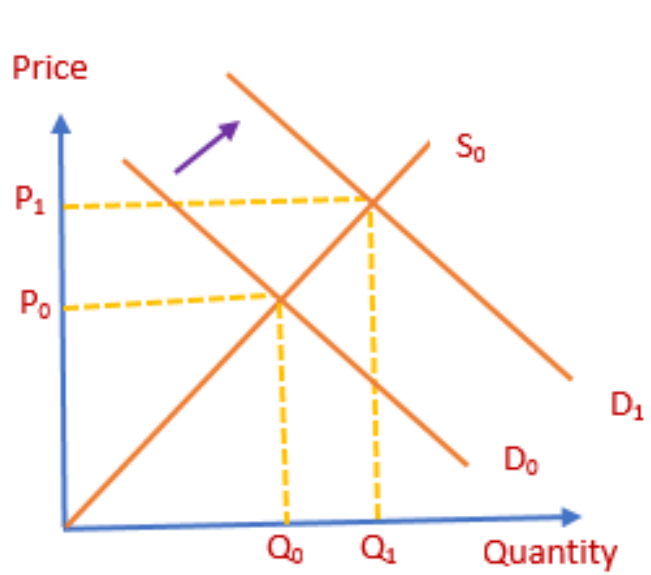
(a) Demand and Supply for houses



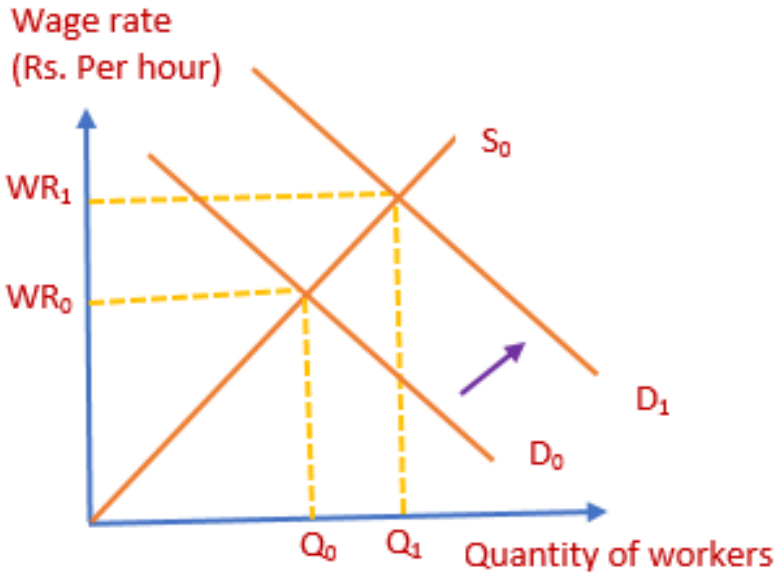
(b) Demand and Supply for carpenters

Derived Demand

- The following Figure (a) shows the demand and supply for houses, while Figure (b) shows the demand and supply for carpenters. When the demand curve for houses increases from D_o to D_1, the demand curve for carpenters shifts from D_o to D_1. This will increase the wage per hour rate of the carpenters. The demand for carpenters is called a derived demand



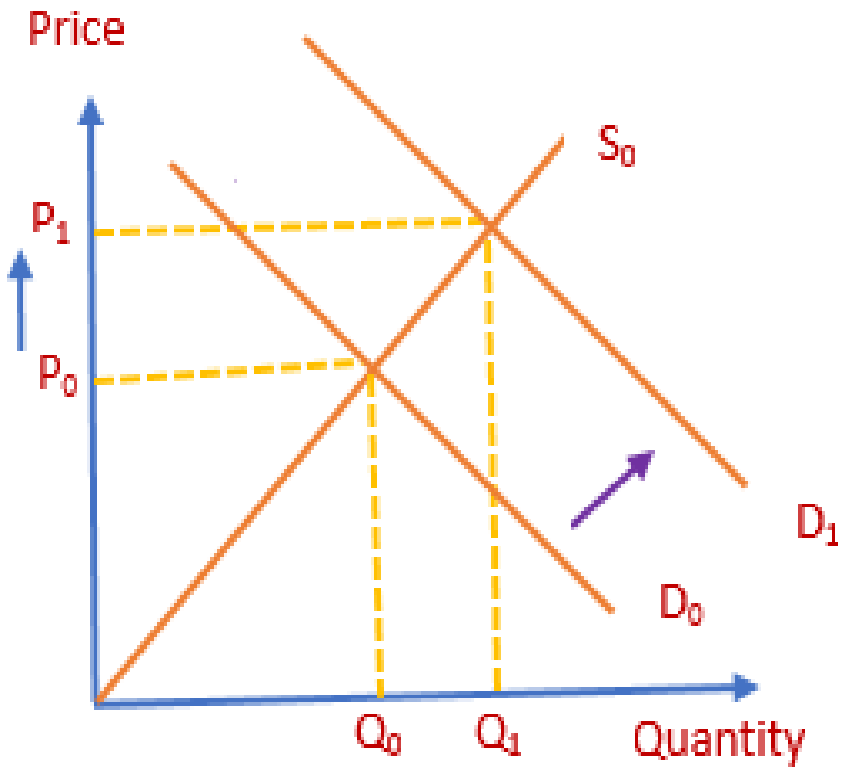
(a) Demand and Supply for houses



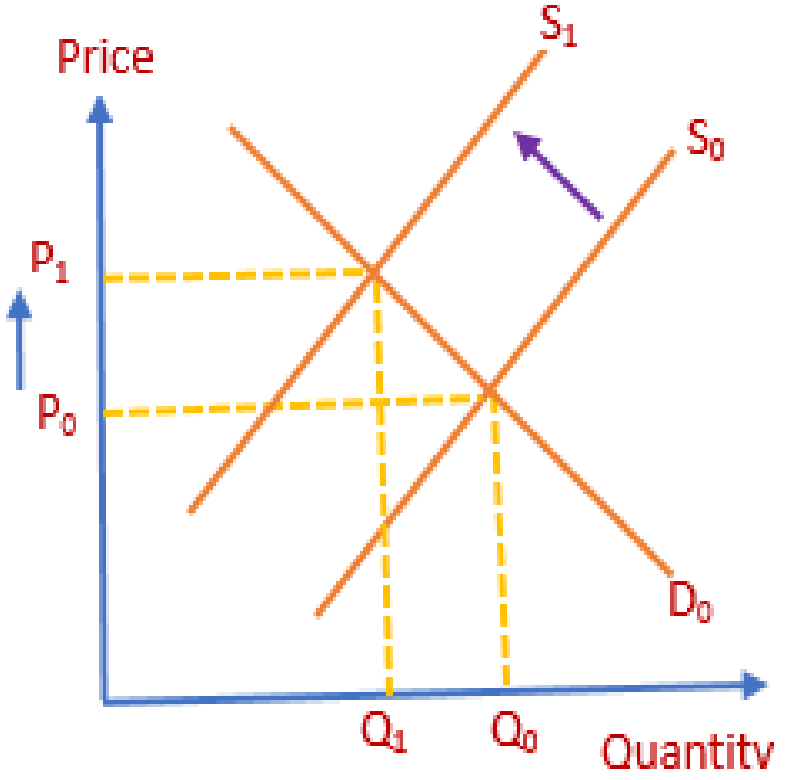
(b) Demand and Supply for carpenters

Composite Demand

Composite demand *is the demand for a good that has multiple uses.*



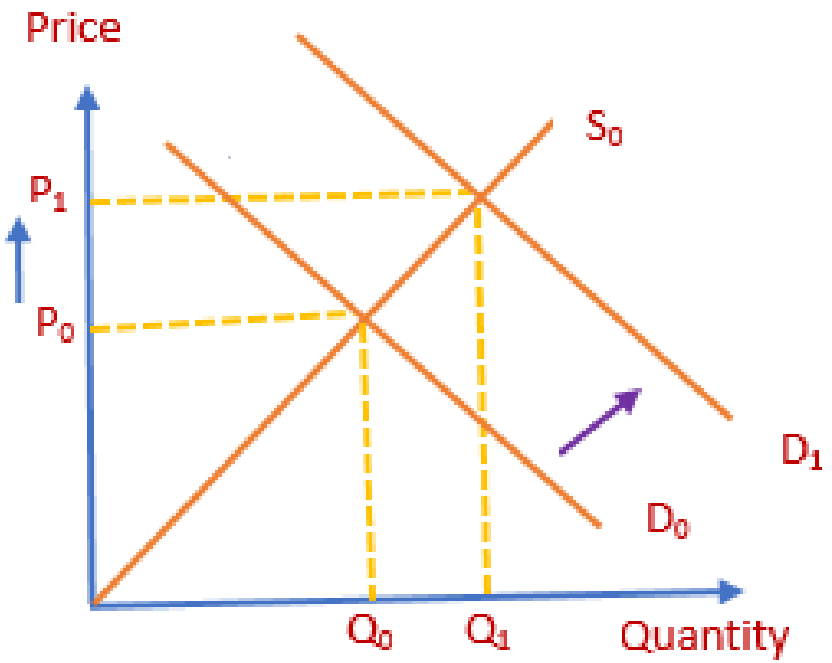
(a) Demand and Supply for butter



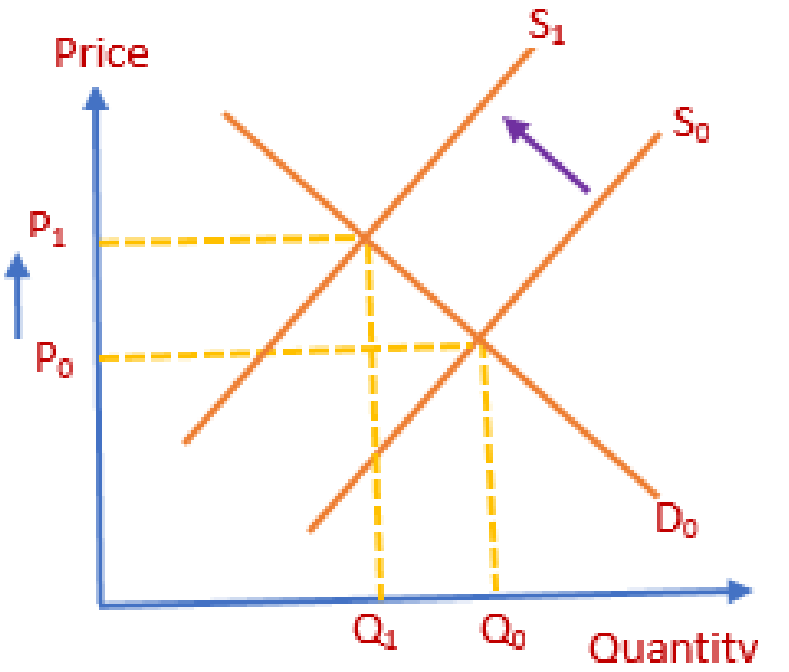
(b) Demand and Supply for cheese

Composite Demand

- For example, sheep can be used for mutton, wool or sheepskin, and milk can be used for making butter, cheese and yogurt. If there is an increase in the demand for butter, this will lead to a decrease in the supply of cheese or yogurt, and vice versa.



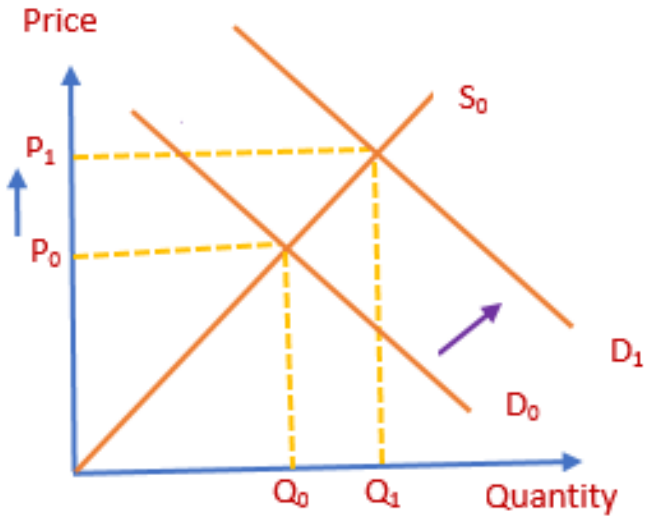
(a) Demand and Supply for butter



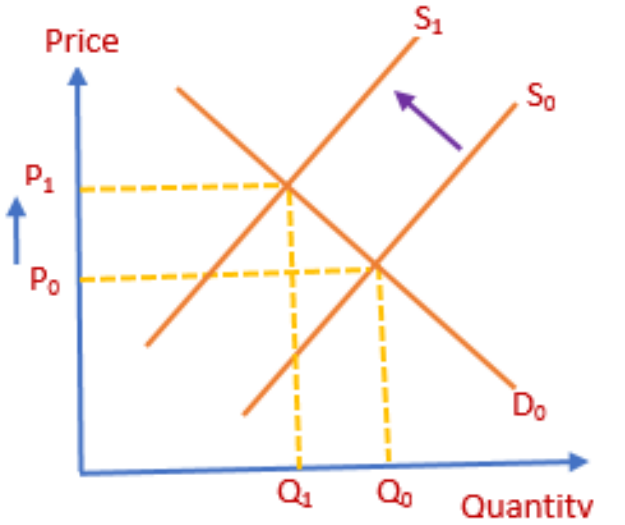
(b) Demand and Supply for cheese

Composite Demand

- The following Figures (a) and (b) show the demand and supply curves for butter and cheese, respectively. The increase in demand for butter shifts the demand curve to the right from D_o to D_1. Since butter and cheese come from the same source (milk), the increased demand for butter will shift the supply curve of cheese to the left from S_0 to S_1. If more milk is used for the production of butter, fewer resources are left for cheese, ceteris paribus.



(a) Demand and Supply for butter

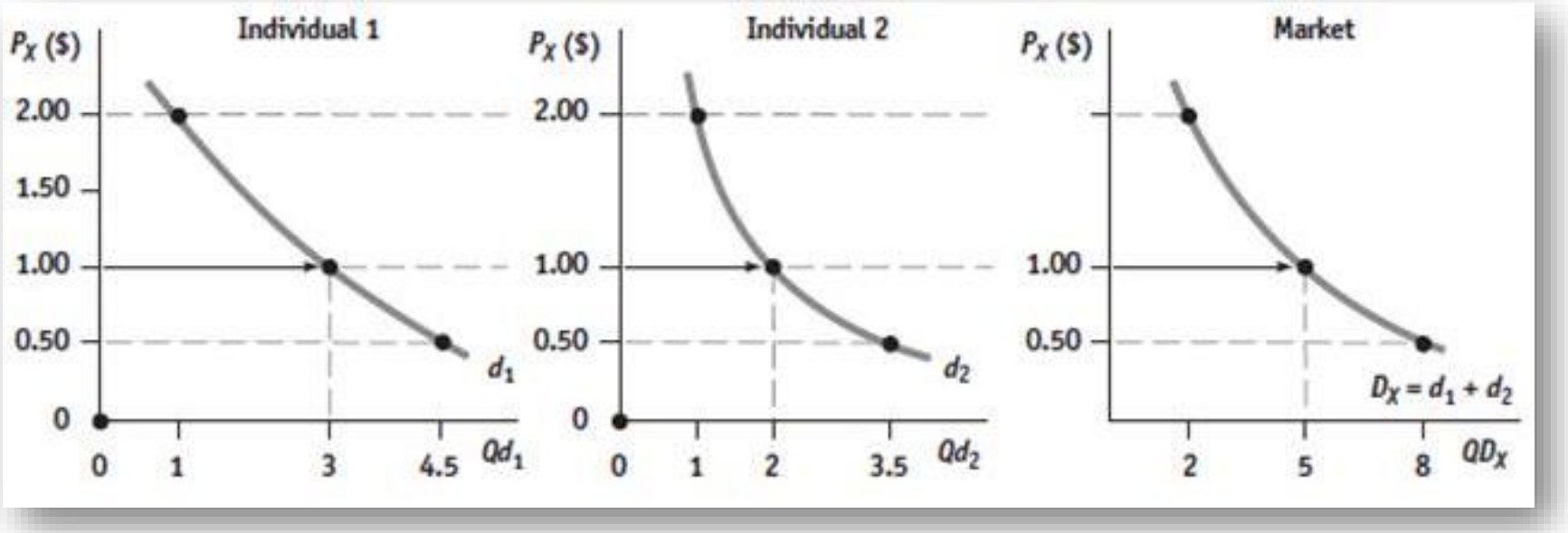


(b) Demand and Supply for cheese

Individual Demand & Market Demand

The relationship between the quantity of a product demanded by a ***single individual*** and its price.

The relationship between the total quantity of a product demanded (by adding all the quantities demanded) by ***all consumers*** in the market and its price.



- Thus, market demand is the **combination of individual demands**.
- Market demand =Individual demand 1 + Individual demand 2

MARKET DEMAND = Σ INDIVIDUAL DEMAND

Law of Supply

Law of Supply

Supply is defined as the **ability and willingness to sell or produce** a particular product or service in a given period of time at a particular price, ceteris paribus.

LAW OF SUPPLY

The law of supply states that **the higher the price** of a product, **the greater the quantity supplied** of that product and **the lower the price** of a product, **the lower the quantity supplied,** ceteris paribus.

Example: If the price of chicken increases, the quantity of chicken supplied will increase since the seller will sell more to earn more profit.

Assumptions:

Al. Cost of production remains constant.

A2. Number of sellers remains the same.

A3. Price of related goods (complements or substitutes) does not change.

A4. Availability of other inputs remains unchanged.

Based on the law of supply, a positive relationship exists between price and the quantity supplied.

$P\uparrow Q_{SS} \uparrow$

$P\downarrow Q_{SS} \downarrow$

Supply Function

Supply function, or supply, shows relation between P & Q_s when all other variables are held constant

$$Q_{ss} = g(P)$$

A point on a supply curve shows either:

- Maximum amount of a good that will be offered for sale at a given price
- Minimum price necessary to induce producers to voluntarily offer a particular quantity for sale

Quantity supplied (Q_{ss})

- Amount of a good or service offered for sale during a given period of time.

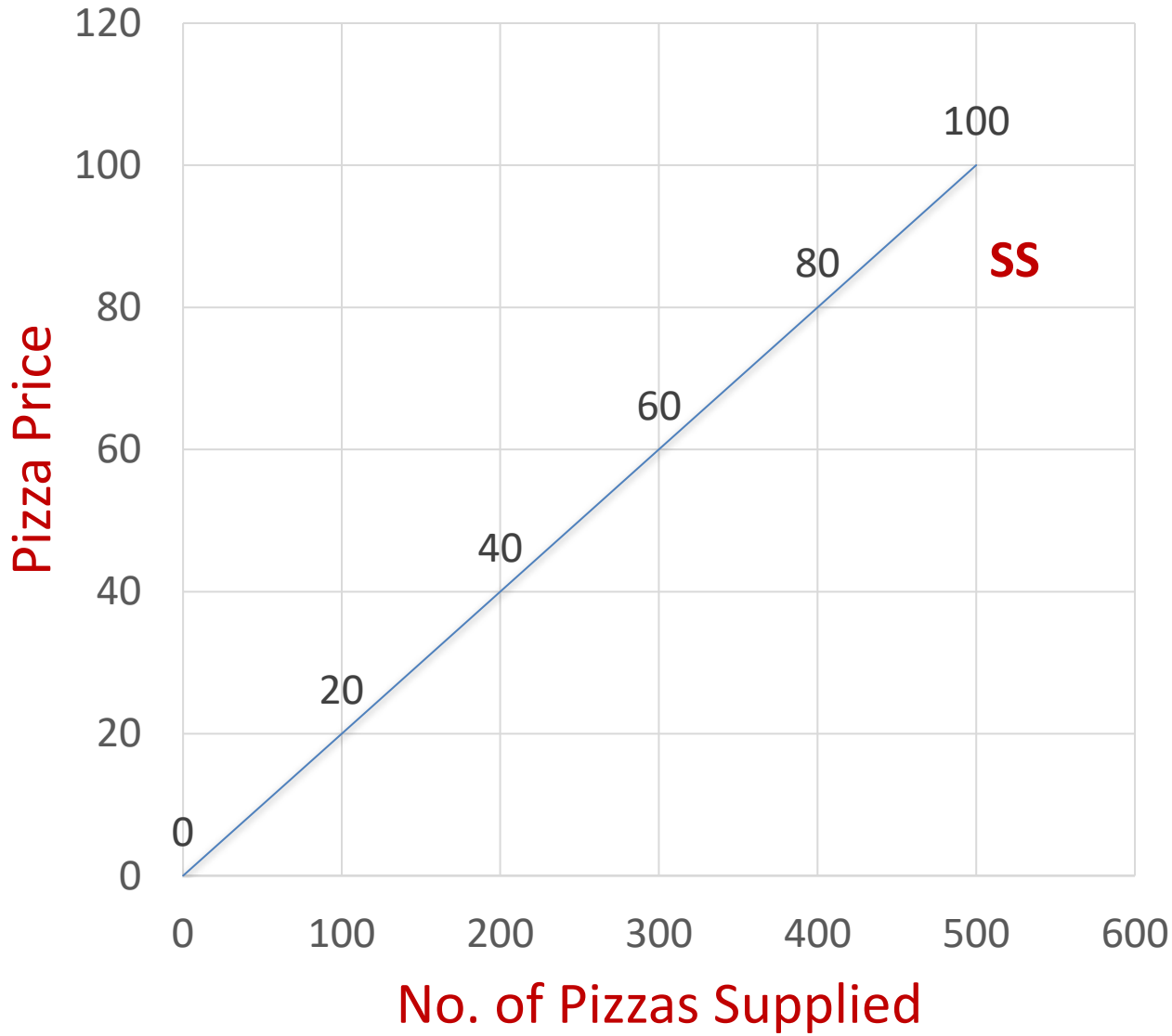
Supply Schedule & Supply Curve

Supply Schedule

- The supply schedule **for a product is a list of the quantity supplied at different prices, assuming all other influences are constant**.
- The supply schedule represents a functional relationship between price and quantity supplied.
- It assumes that other supply determinants, such as the state of technology, government policies and the price of related goods, are all constant.

Pizza Price	No. of Pizzas Supplied
100	500
80	400
60	300
40	200
20	100
00	0

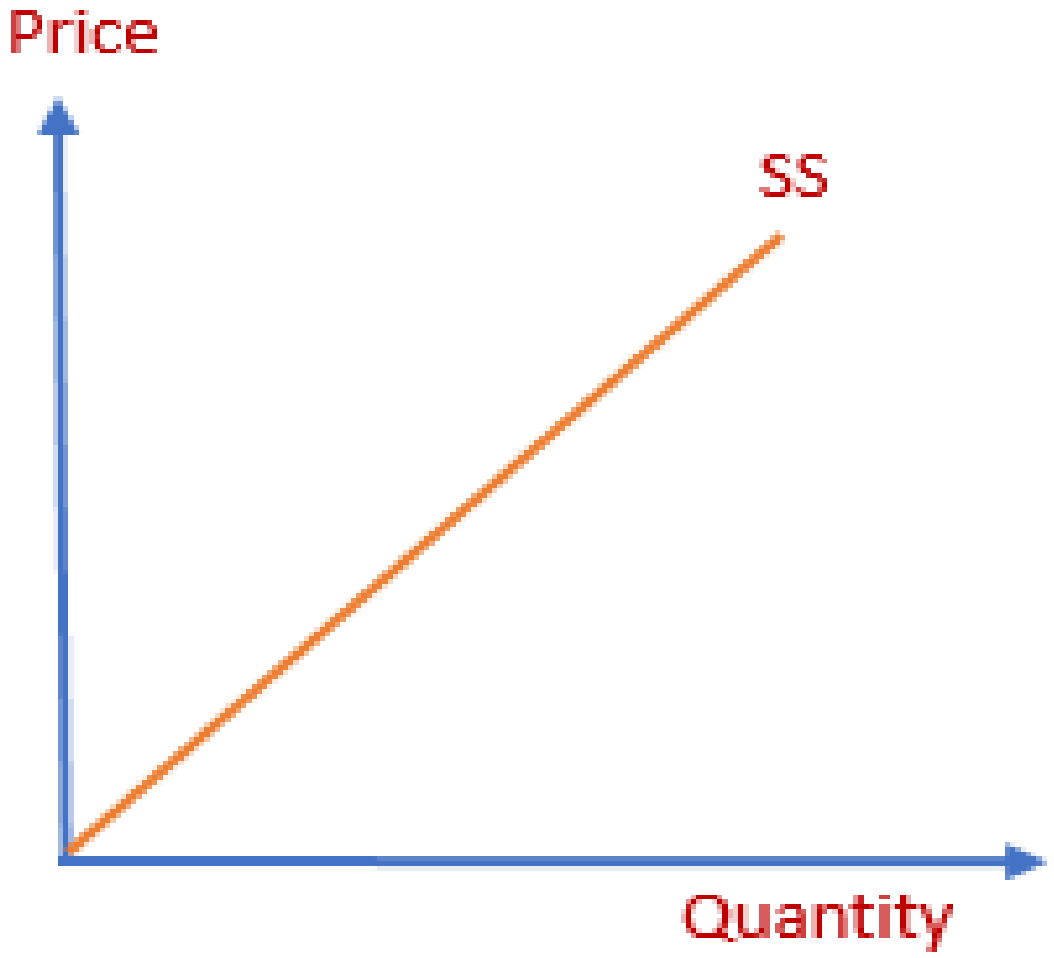
Supply Schedule & Supply Curve



Pizza Price	No. of Pizzas Supplied
100	500
80	400
60	300
40	200
20	100
00	0

Supply Schedule & Supply Curve

Supply Curve: A line on graphs shows the direct relationship between the quantities supplied of a good and its price.



The above supply curve shows the relationship between the quantities of 'Pilot' pens supplied and its price, provided that everything else is constant. The supply curve slopes upwards.

Case 9

India hopeful of long-term tur dal supply from Mozambique

Press Trust of India | New Delhi Last Updated at June 26, 2016 12:57 IST

Indian delegations last week visited **pulses growing nations, Mozambique and Myanmar**, to explore government-to- government arrangement for **assured supply of lentils, especially tur, on a long term basis.**

Mozambique grows around 70,000 tonnes pulses, mainly tur dal and some urad. The entire quantity is exported to India and to meet NRI demand in other parts of world. Same is with **Myanmar which produces about 50,000 tonnes of tur.**

Even if **India signs a deal with Mozambique, tur dal cannot be supplied immediately as the latter's rabi tur crop is expected to arrive only by September-October**. In domestic market, **retail pulses prices have risen unabated for more than a year and at present ruling close to Rs 200/kg in view of seven million tonnes shortfall in domestic output** following two drought years.

India hopeful of long-term tur dal supply from Mozambique

Press Trust of India | New Delhi Last Updated at June 26, 2016 12:57 IST

To domestic price rise, the government is **creating buffer stock of pulses up to 8 lakh tonnes from domestic procurement and imports.** It has **imposed stock holding limits on pulses to check hoarding, banned chana futures and also selling tur and urad at subsidised rates to give relief to consumers.**

India's pulses output is estimated to be 17.06 million tonnes in 2015-16 crop year (July-June), marginally lower than the previous year's production of 17.15 million tonnes.

But the **output is lower than the overall demand of 23.5 million tonnes.**

Analysis: Decrease in the production of Tur dal in India due to weak monsoon. Price of Tur dal increased from Rs.60 per kg to Rs.200 kg in the Indian market because of less supply of Tur dal.

Determinants of Supply

1. Price of related goods

The supply of a product can be influenced by the price of related goods:

***a)* Price of *Substitute goods*(P_s)**

Supply of a product will decrease when there is an increase in the price of a substitute product, e.g. Pepsi and Coca Cola. If the price of Pepsi increases, the quantity supplied will increase (as per the law of supply) and the quantity of Coca Cola will decrease.

$$P_{Pepsi} \uparrow Q_{SS\ Pepsi} \uparrow SS_{Coke} \downarrow$$

Determinants of Supply

***b)* Price of *Complementary goods*(P_c)**

An increase in the price of a product will increase the supply of a complementary product, e.g. pen and ink. When the price of pens increases, the quantity supplied for pens will increase (as per the law of supply) and the supply of ink will also increase, since both are complementary goods.

$$P_{Pen} \uparrow Q_{SS\ Pen} \uparrow SS_{Ink} \uparrow$$

Determinants of Supply

2. Cost of production(C_p)

- Supply will change in response to the *factors of production:* labour, capital or land. When the cost of production increases, the quantity supplied will decrease, and vice versa. For example, an increase in the wages of labour and price of capital equipment in the production of DVDs, will increase the cost of production and thus reduce the supply of DVDs.

3. Expectation about future prices(E_{fp})

- *The higher the expected future price of a product, the smaller the current supply of the product, and vice versa.* For example, when the government announces an increase in the price of sugar, the current supply will decrease because the suppliers want to gain a higher profit with a new higher price.

4. Technological advancement(T)

- Advancement in technology is the most important influence on supply. New technologies that enable producers to use fewer factors of production will *lower the cost of production* and *increase supply.* For example, when new technology was introduced in paddy harvesting, the supply of rice increased.

Determinants of Supply

5. Number of sellers(N_s)

- *The larger the number of firms supplying a product, the larger the quantity supplied for the product, and vice versa. For* example, if there is an increase in the number of cafeterias in a university campus, the supply of food and drinks will increase.

6. Government policies

- ***Taxes***(T_{ax}) : Taxes will ***decrease the supply*** of goods and services because taxes *discourage* producers from producing extra which increases the cost of production.
- ***Subsidies***(S_s) ***:*** Subsidies will ***increase supply*** as subsidies *encourage* producers to produce more.

7. Improvements in infrastructure(I_i)

- Improvements in infrastructure such as transportation and communication will facilitate free and fast movement of goods and services within the country. This increases the supply of the product.

Generalized Supply Function: Multivariate Supply Function

$$Q_{SS} = \alpha + \beta_1 P_{g\&s} - \beta_2 P_s + \beta_3 P_c - \beta_4 C_p - \beta_5 E_{fp} + \beta_6 T + \beta_7 N_s - \beta_8 T_{ax} + \beta_9 S_s + \beta_{10} I_i$$

Where,

- $(P_{g\&s})$ = Price of goods and services
- (P_s) = Price of *Substitute goods*
- (P_c) = Price of *Complementary goods*
- (C_p) = Cost of production
- (E_{fp}) = Expectation about future prices
- (T) = Technological advancement
- (N_s) = Number of sellers
- (T_{ax}) = *Taxes*
- (S_s) = *Subsidies*
- (I_i) = Improvements in infrastructure

- $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9$ and β_{10} are slope of the parameters.
- Measure effect on Q_{SS} of changing one of the variable while holding the others constant.
- Positive sign indicates direct relationship.
- Negative sign indicates inverse relationship.

Generalized Supply Function

Independent Variable	Relation to Q_{SS}	Sign of Slope Parameter
($P_{g_{\&}s}$) = Price of goods and services	Direct	$\beta_1 = {}_{\Delta}Q_{ss/\Delta}P_{g_{\&}s}$ is positive
(P_s) = Price of Substitute goods	Inverse	$\beta_2 = {}_{\Delta}Q_{dd/\Delta}P_s$ is negative
(P_c) = Price of Complementary goods	Direct	$\beta_3 = {}_{\Delta}Q_{dd/\Delta}P_c$ is positive
(C_p) = Cost of production	Inverse	$\beta_4 = {}_{\Delta}Q_{dd/\Delta}C_p$ is negative
(E_{fp}) = Expectation about future prices	Inverse	$\beta_5 = {}_{\Delta}Q_{dd/\Delta}E_{fp}$ is negative
(T) = Technological advancement	Direct	$\beta_6 = {}_{\Delta}Q_{dd/\Delta}T$ is positive
(N_s) = Number of sellers	Direct	$\beta_7 = {}_{\Delta}Q_{dd/\Delta}N_s$ is positive
(T_{ax}) = Taxes	Inverse	$\beta_8 = {}_{\Delta}Q_{dd/\Delta}C_{ftp}$ is positive
(S_s) = Subsidies	Direct	$\beta 9 = {}_{\Delta}Q_{dd/\Delta}S_s$ is positive
(I_i) = Improvements in infrastructure	Direct	$\beta 10 = {}_{\Delta}Q_{dd/\Delta}I_i$ is positive

Change in Quantity Supplied Vs. Change in Supply

Change in Quantity Supplied

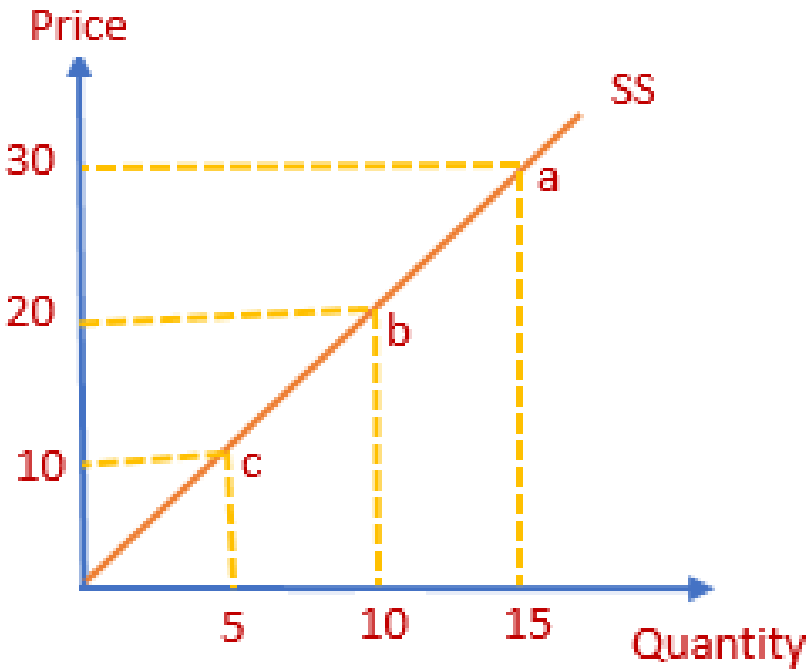
Occurs when the price of a product changes and there is a movement along the supply curve, ceteris paribus.

If the prices of products change and other factors are constant, there will be a movement along the supply curve. The *movement along the supply curve* illustrates the ***change in quantity supplied.***

An upward movement along the supply curve	→	**Increase in quantity supplied**
See Figure (a), from point b to point a.		

A downward movement along the supply curve	→	**Decrease in quantity supplied**
See Figure (a), from point b to point c.		

Change in Quantity Supplied Vs. Change in Supply



(a) Changes in quantity supplied

- ✓ **Movement** along the supply curve
- ✓ Occurs when *price of a product changes*
- ✓ Other factors remain constant
- ➢ **Upward movement**
  - price of a product rises, the *quantity supplied increases.*
  - *Example: from point b to point a*
- ➢ **Downward movement**
  - price of a product falls, the *quantity supplied decreases.*
  - *Example: from point b to point c*

Change in Quantity Supplied Vs. Change in Supply

Change in Supply

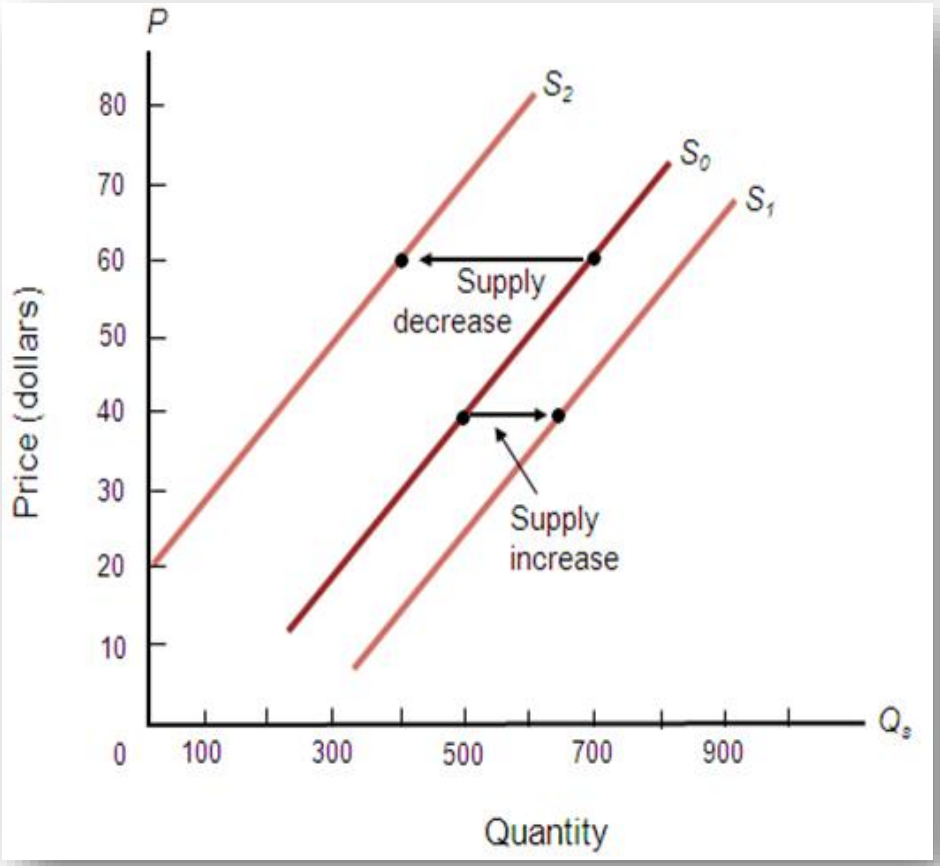
Occurs when other factors change but the price of a product remains constant, supply curve will shift.

If the price of a product is constant and other factors *(refer to* previous topic, Determinants of Supply) change, there will be a ***shift of the supply curve.***

An increase in supply	→	**Supply increases and the supply curve shifts to the right.**
A decrease in supply	→	**Supply decreases and the supply curve shifts to the left.**

Change in Quantity Supplied Vs. Change in Supply

- ✓ **Shift** in *the* supply curve
- ✓ Occurs when there are ***changes In other factors*** such as technology, government policies, price of related goods, etc.
- ✓ Price of a product remains constant
- ✓ Increase in Supply ($S_0 \rightarrow S_1$)

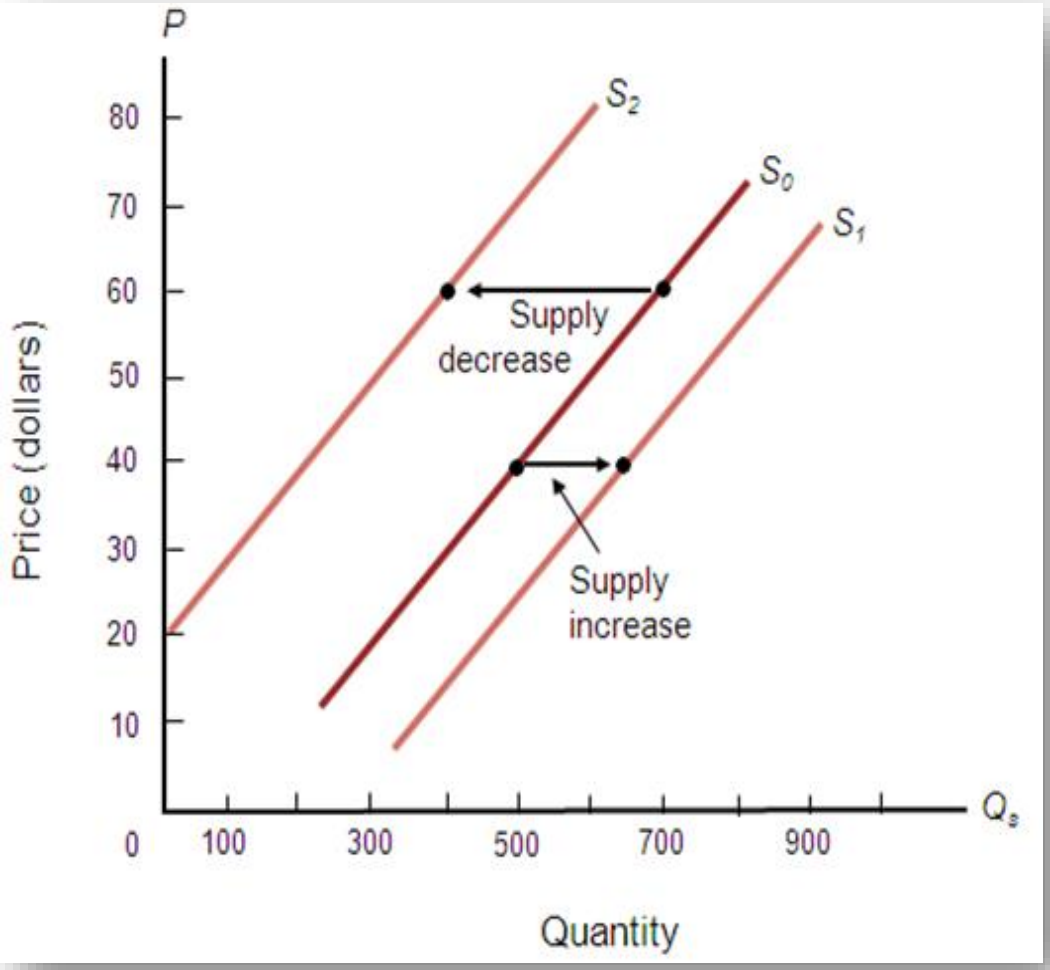


Supply curve shifts to right if:

1. Price of substitute goods decreases.
2. Price of complementary goods increases.
3. Price of input decreases.
4. Expected future price decreases.
5. Increase in number of sellers.
6. Government provides subsidy to sellers.

✓Increase in Supply ($S_0 \rightarrow S_1$)

Change in Quantity Supplied Vs. Change in Supply



Supply curve shift to left if:

1 Price of substitute goods increases.

2 Price of complementary goods decreases.

3 Price of inputs increases.

4 Expected future price increases.

5 Decrease in number of sellers.

6 Government imposes tax on sellers.

Examples

Explain whether each of the following events represents (i) **a *shift of* the supply curve or** (ii) **a *movement along* the supply curve.**

a. More homeowners put their houses up for sale during a real estate boom that causes house prices to rise.

b. Many strawberry farmers open temporary roadside stands during harvest season, even though prices are usually low at that time.

c. Immediately after the school year begins, fast-food chains must raise wages, which represent the price of labor, to attract workers.

d. Many construction workers temporarily move to areas that have suffered hurricane damage, lured by higher wages.

e. Since new technologies have made it possible to build larger cruise ships (which are cheaper to run per passenger), Caribbean cruise lines offer more cabins, at lower prices, than before.

Answers

a. The quantity of houses supplied rises as a result of an increase in prices. This is a ***movement along*** **the supply curve.**

b. The quantity of strawberries supplied is higher at any given price. This is a **rightward *shift of* the supply curve.**

c. The quantity of labor supplied is lower at any given wage. This is a **leftward *shift of* the supply curve** compared to the supply curve during school vacation. So, in order to attract workers, fast-food chains have to offer higher wages.

d. The quantity of labor supplied rises in response to a rise in wages. This is a ***movement along*** **the supply curve.**

e. The quantity of cabins supplied is higher at any given price. This is a **rightward *shift of* the supply curve.**

Exceptional Supply

Is against the law of supply where as the price increases, the quantity supplied decreases. The supply curve is *negatively sloped,* as shown in Figure.

Income Effect

A higher income induces an increase in demand for leisure. So, less time is spent on work there is a decrease in the *quantity of labour supplied.* For example, if David has enough money, additional pay will not encourage him to increase his work hours above the normal 8 hours. He will wish to spend his money on leisure activities. Therefore, an increase income will reduce the labour supplied.

Joint Supply: An increase in the supply of a good brings to an increase in the supply of other related goods.

For example, sheep can be used for meat, wool and sheepskin, whereas cows for milk, beef and dairy products. So, if the supply of sheep increases, the supply of meat and wool also increases, and vice versa.

Individual Supply & Market Supply

Individual supply: The relationship between the quantity of a product supplied by a single seller and its price.

Market supply : The relationship between the total quantity of a product supplied (by adding all the quantities supplied) by ***all sellers*** in the market and its price.

A market supply schedule for 'Pilot' pens. Some sellers would be willing in sell more at a particular price, while other sellers would sell less. Individual supply and market supply can be explained as follows:

- Thus, market supply is the **combination of individual supplies**
- Market supply =Individual supply 1 + Individual supply 2

MARKET SUPPLY = Σ INDIVIDUAL SUPPLY

Equilibrium

Market Equilibrium

A *market equilibrium is a situation when quantity demanded and quantity supplied are equal*

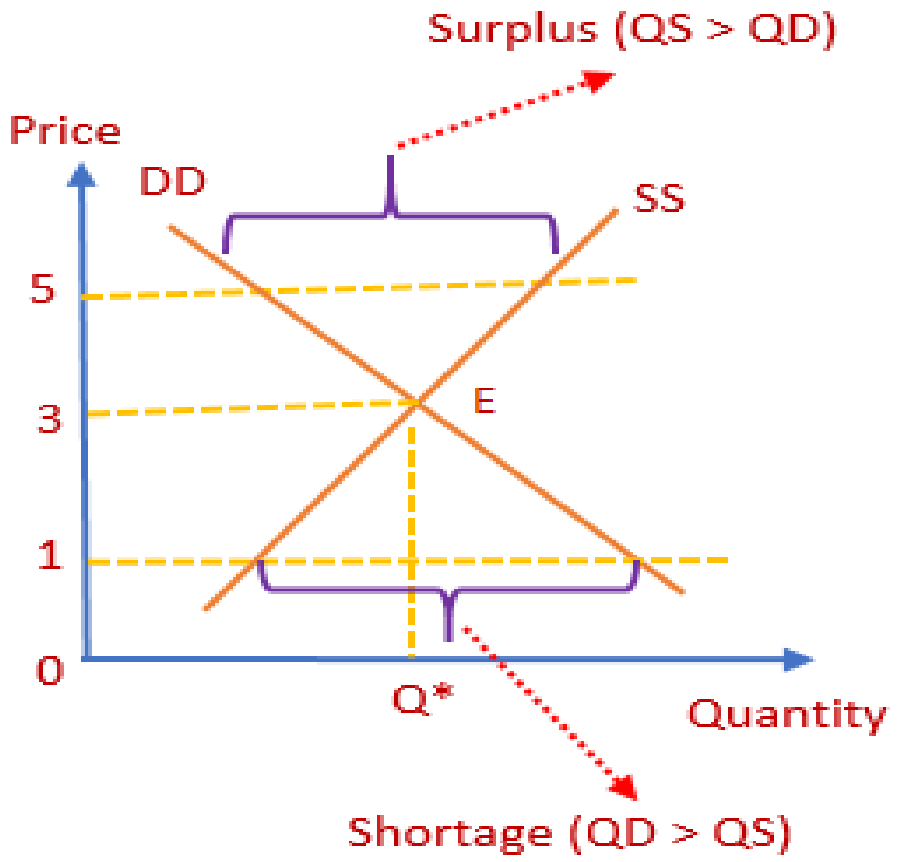
And there is no tendency for price or quantity to change. When a market is in equilibrium, the quantity sellers are willing to sell balances exactly with the quantity buyers are willing *to* buy. There is no tendency for the market price to increase or decrease. Equilibrium can occur irrespective of the price and quantity involved.

Price	Quantity demanded (units)	Quantity supplied (units)	Market conditions(surplus (+) or shortage (-))		Market prices
5	2	10	10 – 2 = 8	Surplus	Fails
4	4	8	8 – 4 = 4	Surplus	Fails
3	**6**	**6**	**6 – 6 = 0**	**Equilibrium**	**Equilibrium**
2	8	4	4 – 8 = -4	Shortage	Rises
1	10	2	2 – 10 = -8	Shortage	Rises

Market Equilibrium

Equilibrium Price and Output

Market equilibrium is determined by the intersection of both the demand and supply curve. Table lists the quantity demanded and quantity supplied of 'Pilot' pens at each price level, as well as shortages and surpluses.



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2	8	4	4 – 8 = -4	Shortage	Rises
1	10	2	2 – 10 = -8	Shortage	Rises

Market Equilibrium

- Based on Figure, the equilibrium occurs where the *demand curve* for 'Pilot' pens (DD) and *supply curve* for 'Pilot' pens (SS) intersect. Point E indicates the *equilibrium price* and *equilibrium quantity. At* the price of Rs.3 per unit, the equilibrium quantity of 6 units of 'Pilot' pens are bought and sold. So, the *market equilibrium* occurs at a price of Rs.3 and a quantity of 6 units of 'Pilot pens.

What happens at a price *below* Rs.3 (us per Figure)?

SHORTAGE EXISTS

Market Equilibrium

What happens at a price *below* Rs.3 (us per Figure)?
SHORTAGE EXISTS

- **Shortage** is the difference between the quantity demanded and quantity supplied in a market, where the *quantity demanded is* ***greater than*** *the quantity supplied.* **In** Figure, at the price of Rs.1, buyers are willing to buy 10 units of 'Pilot' pens, but sellers want to sell only 2 units of pens. There is a shortage of 8 units of pens. Thus, at the price of Rs.1, buyers will compete amongst themselves for a limited quantity. The sellers who recognize the high demand among the buyers will see an opportunity to increase their prices. *As the price rises, the quantity demanded by the buyers will decline (according to the law of demand) and the quantity supplied by the sellers will increase (law of supply) until it reaches an* ***equilibrium where there is no shortage.***

Market Equilibrium

What happens at a price above Rs.3 (as per Figure)?
SURPLUS EXISTS

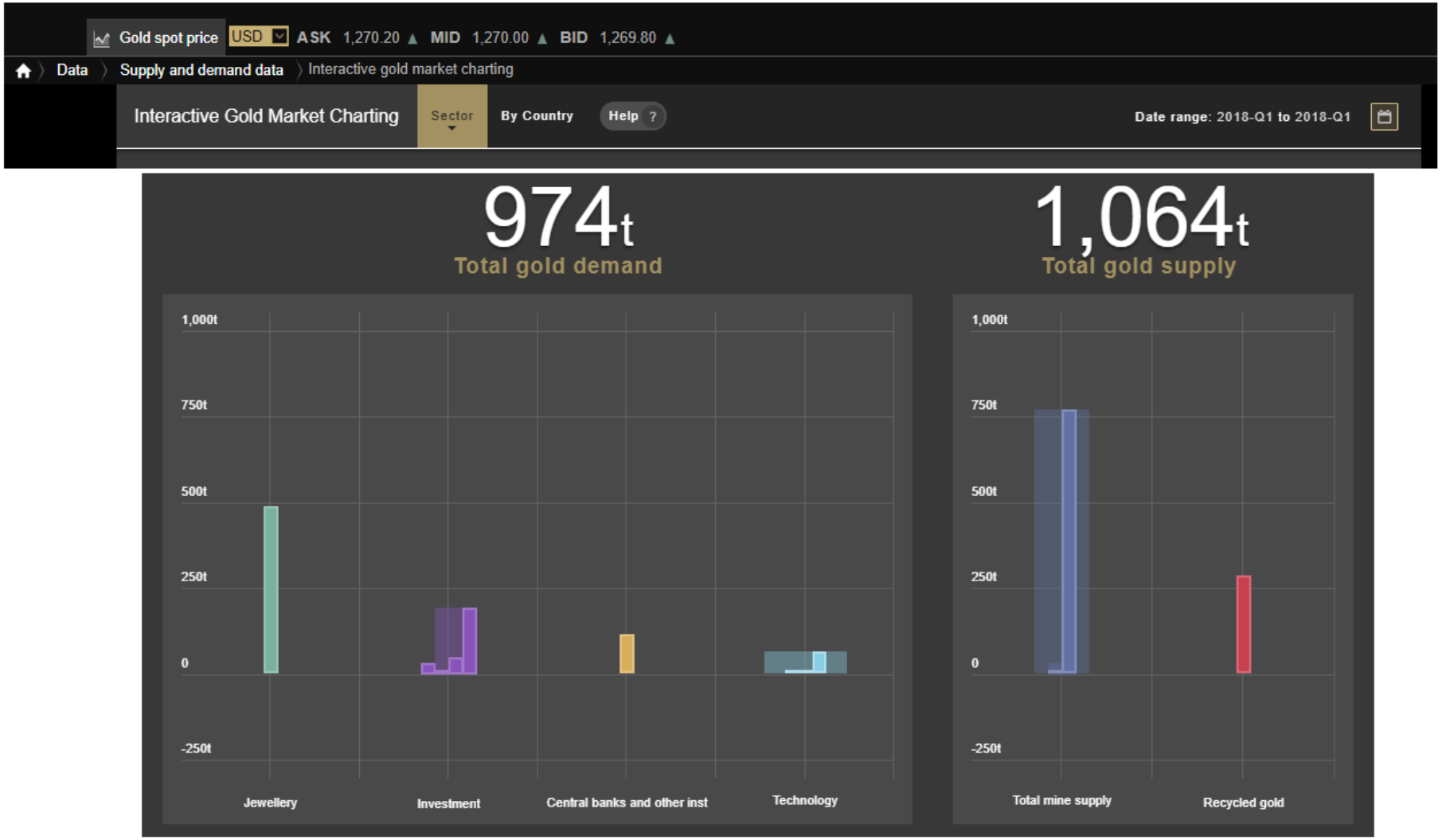
- Surplus is the difference between the quantity demanded and quantity supplied in a market, where the quantity supplied is greater than the quantity demanded. In Figure, at the price of Rs.5, sellers are willing to sell 8 units of 'Pilot' pens, but buyers reduce their demand and are willing to buy only 4 units of pens. There is a surplus of 4 units of pens. At this point, as a surplus exists, sellers will compete amongst themselves for sales by cutting down their prices (prices declines). As the price falls, the quantity demanded by the buyers will increase (according to the law of demand) and the quantity supplied by the sellers will decrease (law of supply) until it reaches an equilibrium where the surplus no longer exists.
- The invisible hand (price mechanism) in the market removes any shortage or surplus and leads to market equilibrium. Table shows the summary of market conditions.

Market condition	Relationship between quantity demanded (QD) and quantity supplied (QS)	Market price
Equilibrium	QD = QS	Equilibrium
Shortage	QD > QS	Rise
Surplus	QD < QS	Fall

Case 10

Market Equilibrium

Demand and Supply of Gold



Gold supply and demand statistics

2 May, 2019 **Sectors:** Supply, Demand **Data categories:** Demand and supply

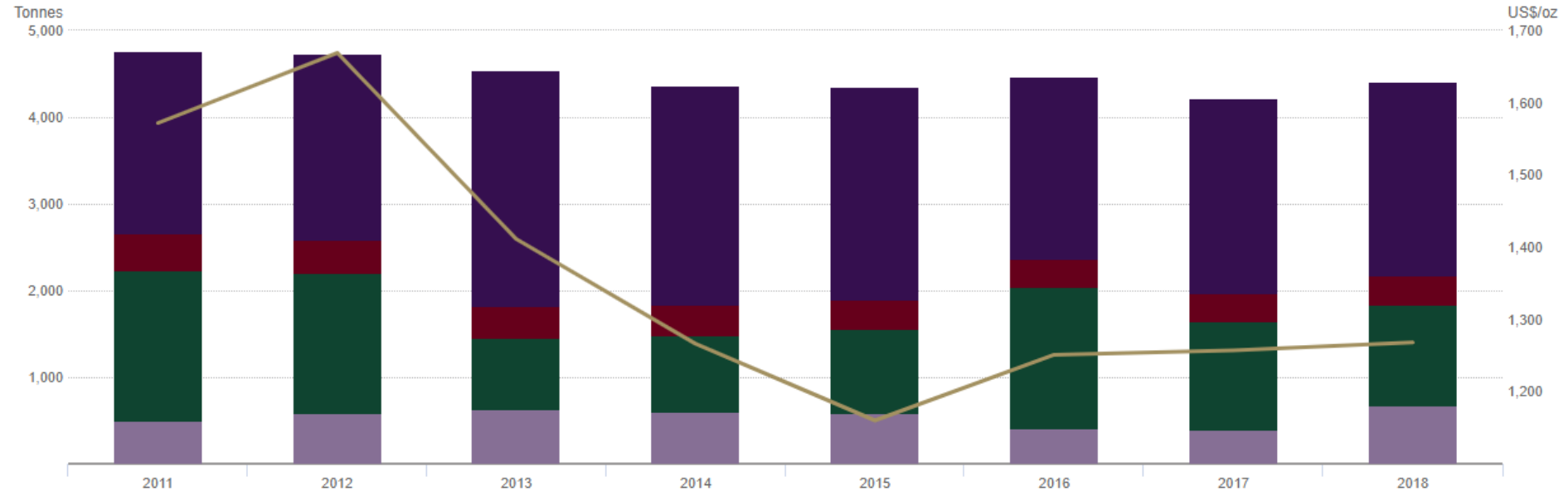
Gold's diverse uses, in jewellery, technology and by central banks and investors, mean different sectors of the gold market rise to prominence at different points in the global economic cycle. This diversity of demand and self-balancing nature of the gold market underpin gold's robust qualities as an investment asset.

This is a comprehensive time series of gold demand – broken down by sector and country – and gold supply – broken down by mine production, recycling and producer hedging.

Annually | Quarterly

All | Technology | Investment

Supply | Demand



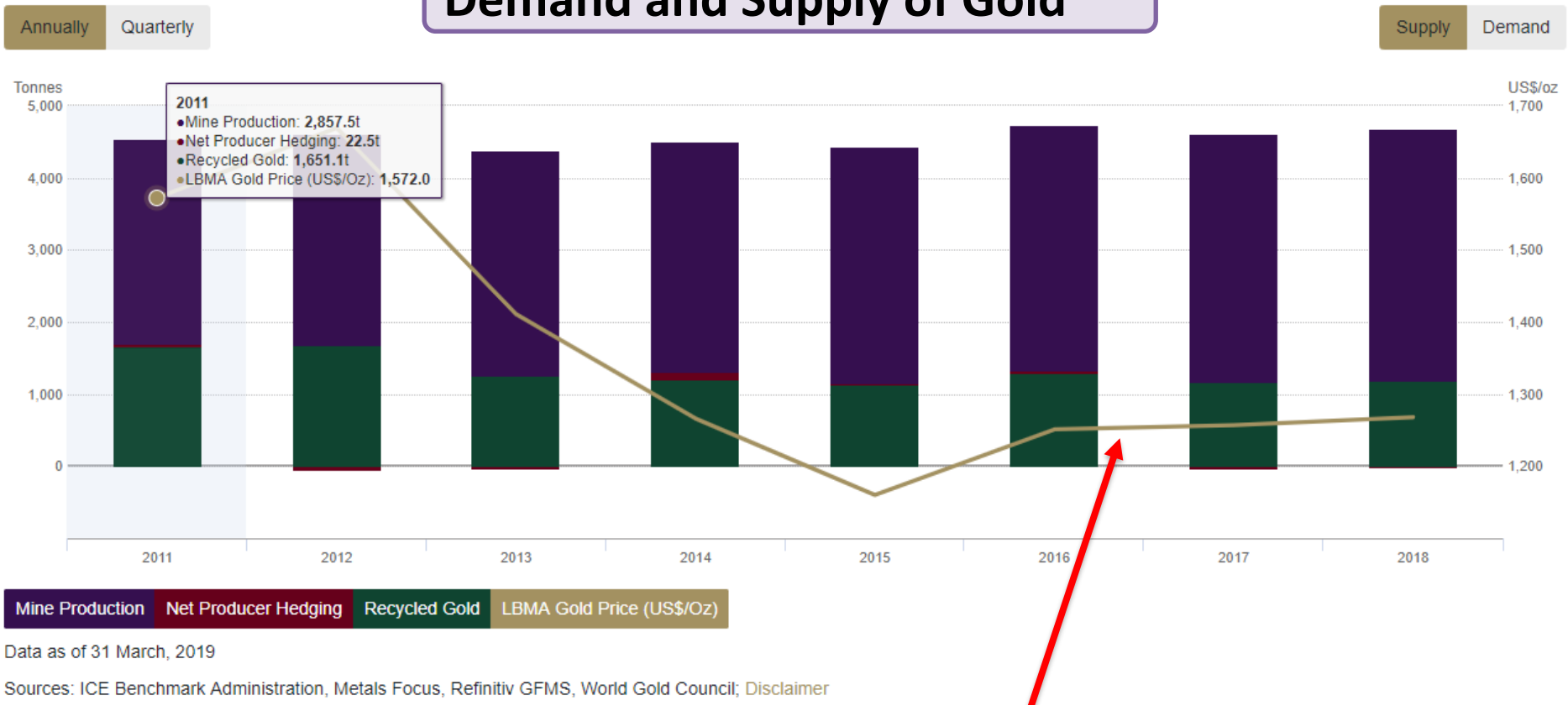
Jewellery | Technology | Investment | Central Banks | LBMA Gold Price (US$/Oz)

Data as of 31 March, 2019

Sources: ICE Benchmark Administration, Metals Focus, Refinitiv GFMS, World Gold Council; Disclaimer

Market Equilibrium

Demand and Supply of Gold



Data as of 31 March, 2019

Sources: ICE Benchmark Administration, Metals Focus, Refinitiv GFMS, World Gold Council; Disclaimer

Analysis: Demand for gold and supply of gold in the global market decide the **equilibrium price** or the market price for gold each time.

Gold prices

1 July, 2019 **Data categories:** Price and performance

Price discovery is crucial for any market. Gold not only has a spot price, but it also has the LBMA Gold Price, as well as several regional prices. The LBMA Gold Price is used as an important benchmark throughout the gold market, while the other regional gold prices are important to local markets.

This data set provides the gold price over a range of timeframes (daily, weekly, monthly, annually) going back to 1978, and in the major trading, producer, and consumer currencies.

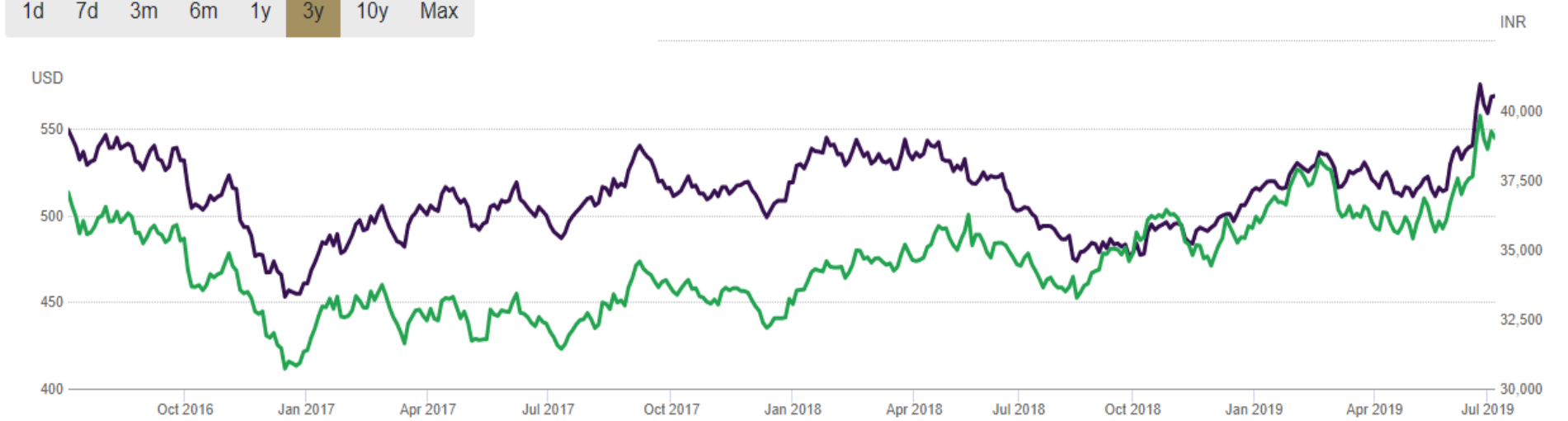
London Bullion Market Association(LBMA)

Gold prices

From 2016-07-06 To 2019-07-04

Oz Grams Kg Tonnes Tael Tola

1d 7d 3m 6m 1y 3y 10y Max

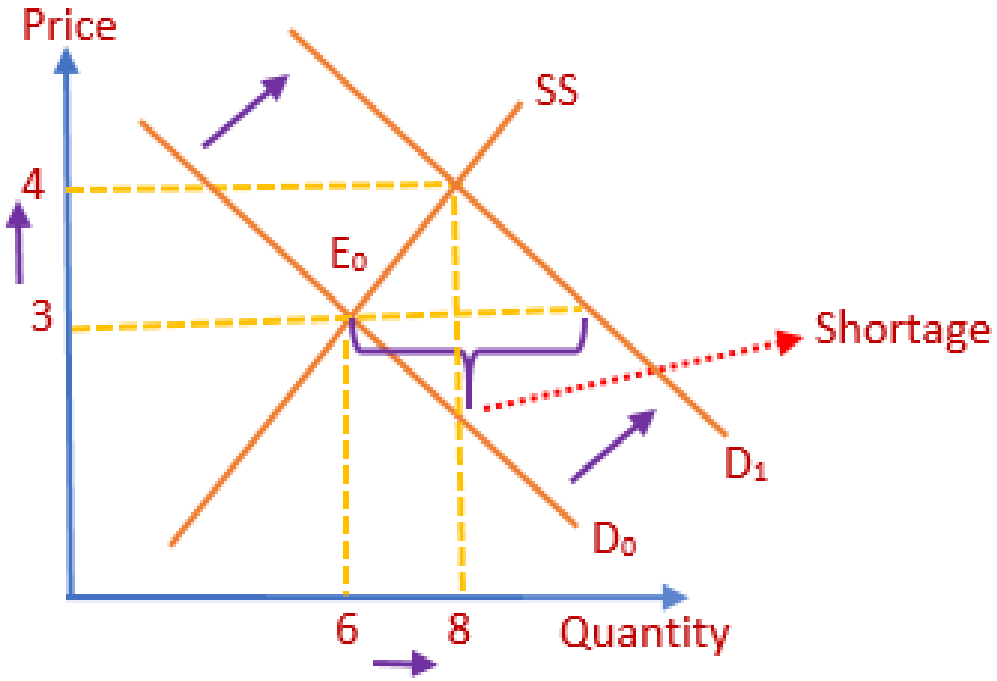


USD GBP EUR AUD CAD CHF JPY ZAR INR CNY HKD MXN

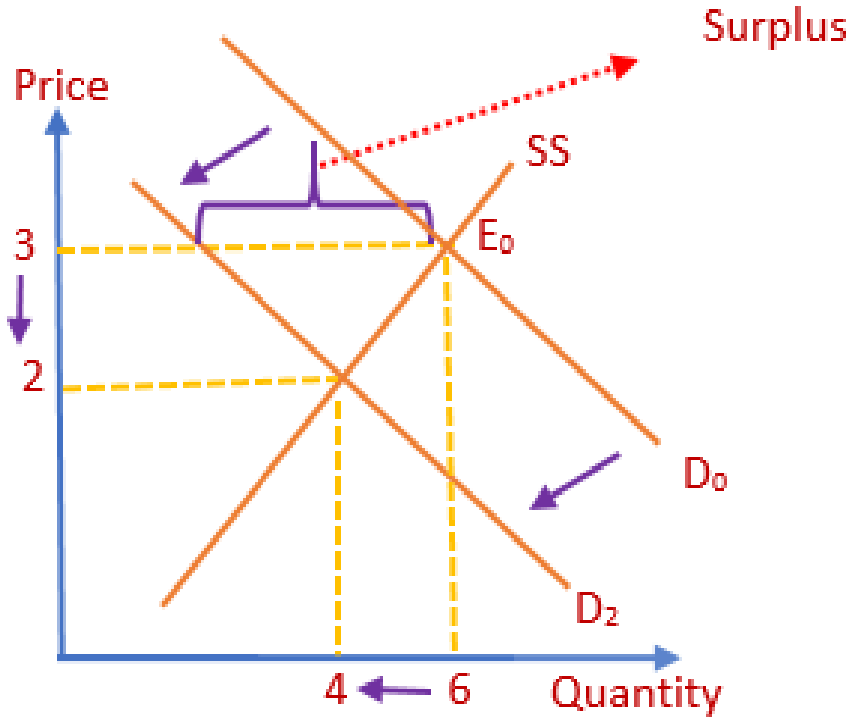
Data as of 4 July, 2019

Sources: FastMarkets, ICE Benchmark Administration, Thomson Reuters, World Gold Council; Disclaimer

Effects of Changes in Demand



(a) Increase in demand

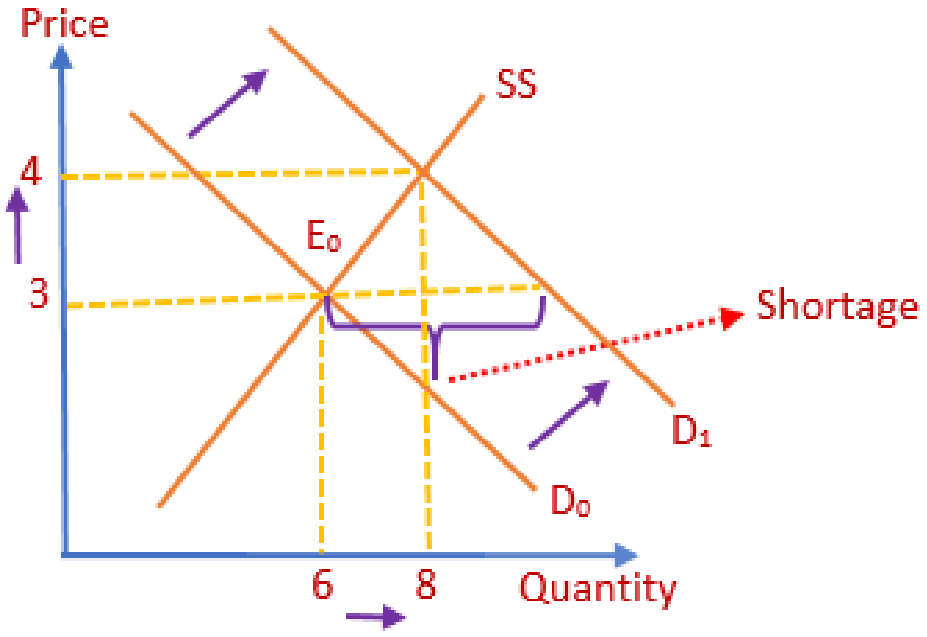


(b) Decrease in demand

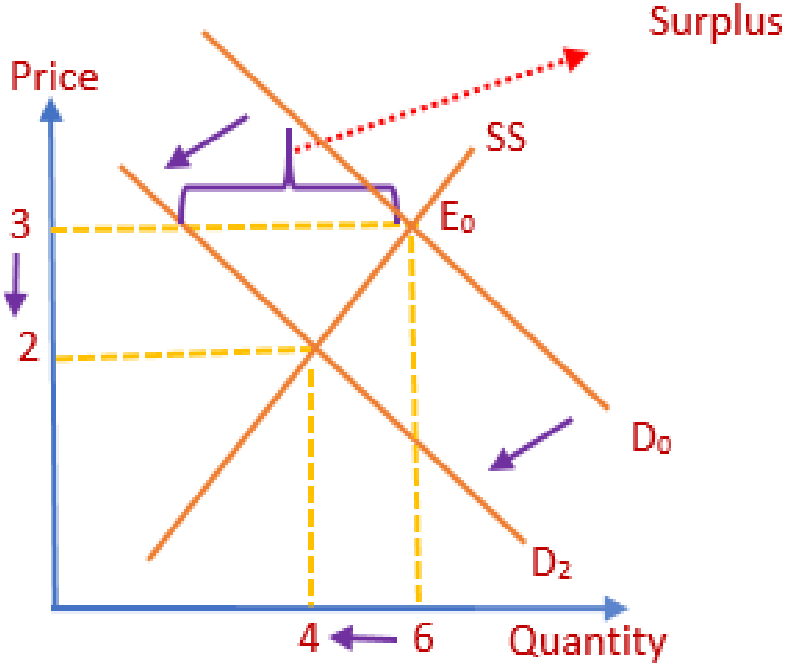
Effects of Changes in Demand

The market equilibrium will change when there is a shift in the demand or supply curves. Here, we will see what happens when:

1. The demand curve shifts and supply remains constant.
2. The supply curve shifts and demand remains constant.
3. Both the demand and supply curves shift simultaneously.



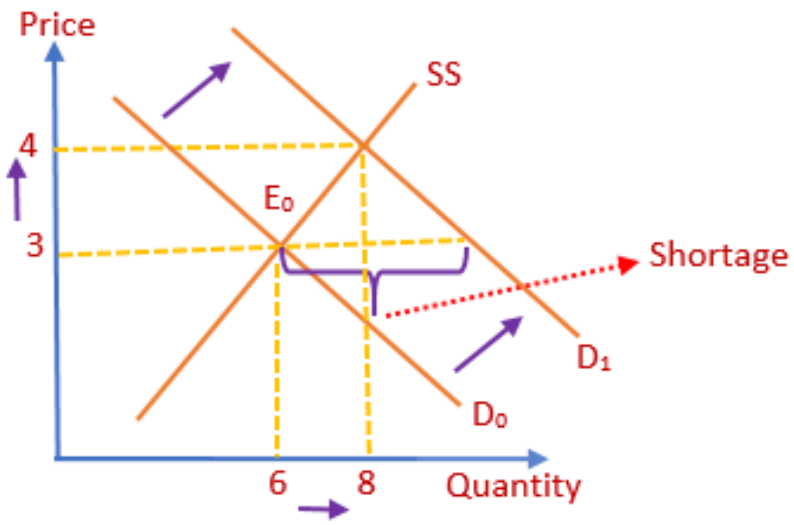
(a) Increase in demand



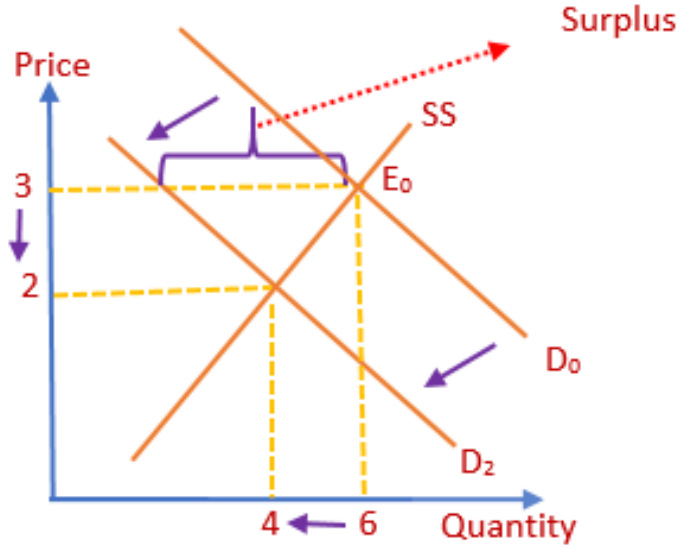
(b) Decrease in demand

Effects of Changes in Demand

- As we know, changes in demand can arise from a number of factors—e.g. changes in the price of substitutes or complement, changes in consumers' income, changes in consumers' `fashion, tastes and preferences, changes in future prices, and so on.
- Figure shows the Effects of changes in demand when supply remains unchanged.



(a) Increase in demand

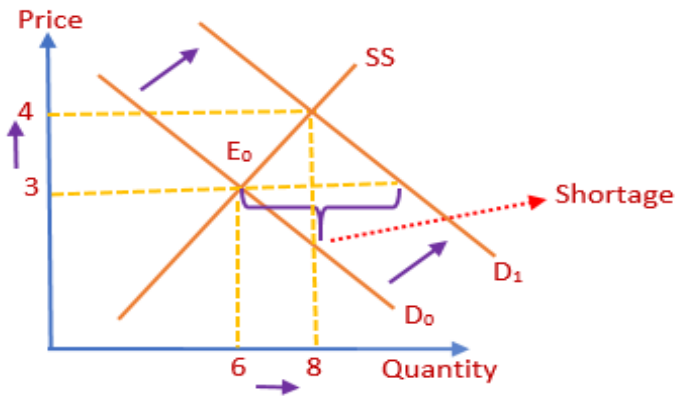


(b) Decrease in demand

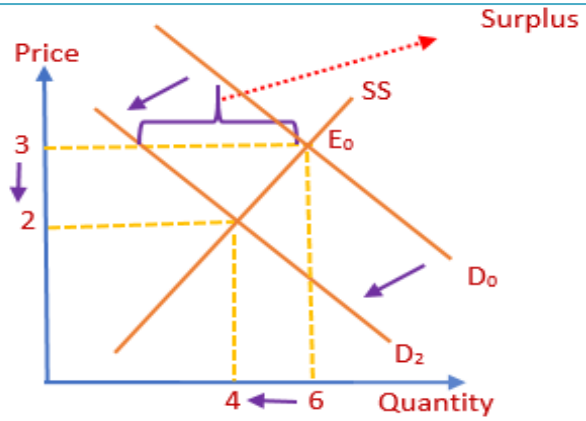
Effects of Changes in Demand

Increase in demand

- In Figure (a), D0 is the initial demand curve and SS is the supply curve. The equilibrium price is Rs.3 and the equilibrium quantity is 6 units (point E0).
- Suppose there is an increase in demand for 'Pilot' pens, as shown in Figure (a); the demand curve will shift to the right (D1). At the initial price of Rs.3, there is a shortage, so the price rises and quantity supplied increases. The new demand curve, D1, intersects with the supply curve, SS, at a price of Rs.4. Thus, the equilibrium price will increase from Rs.3 to Rs.4 and the equilibrium quantity will increase from 6 units to 8 units.



(a) Increase in demand

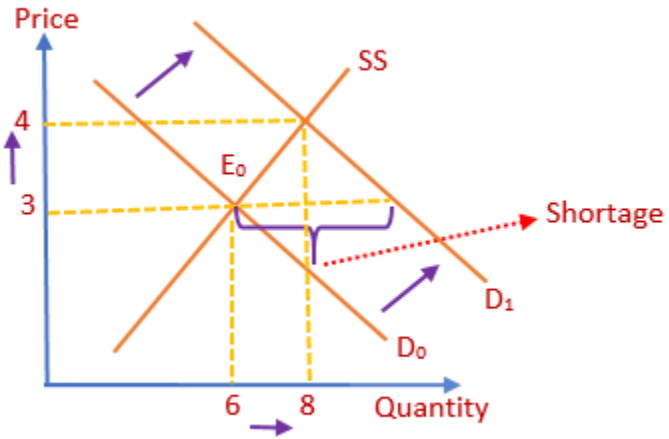


(b) Decrease in demand

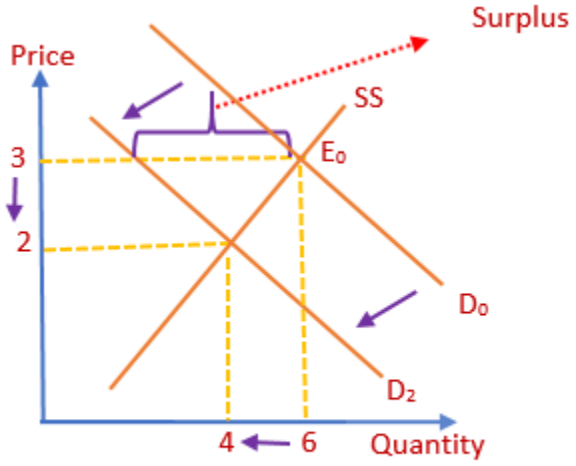
Effects of Changes in Demand

Decrease in demand

- A decrease in demand for 'Pilot' pens has the opposite effect on the equilibrium price and quantity As shown in Figure (b), a decrease in demand will cause the demand curve to shift to the left (D2). At the initial price of Rs.3, there is a surplus, so the price falls and quantity supplied decreases. The new demand curve, D2, intersects with the supply curve, SS, at a price of n. Thus, the equilibrium price will decrease from Rs.3 to Rs.2 and the equilibrium quantity will decrease from 6 units to 4 units.

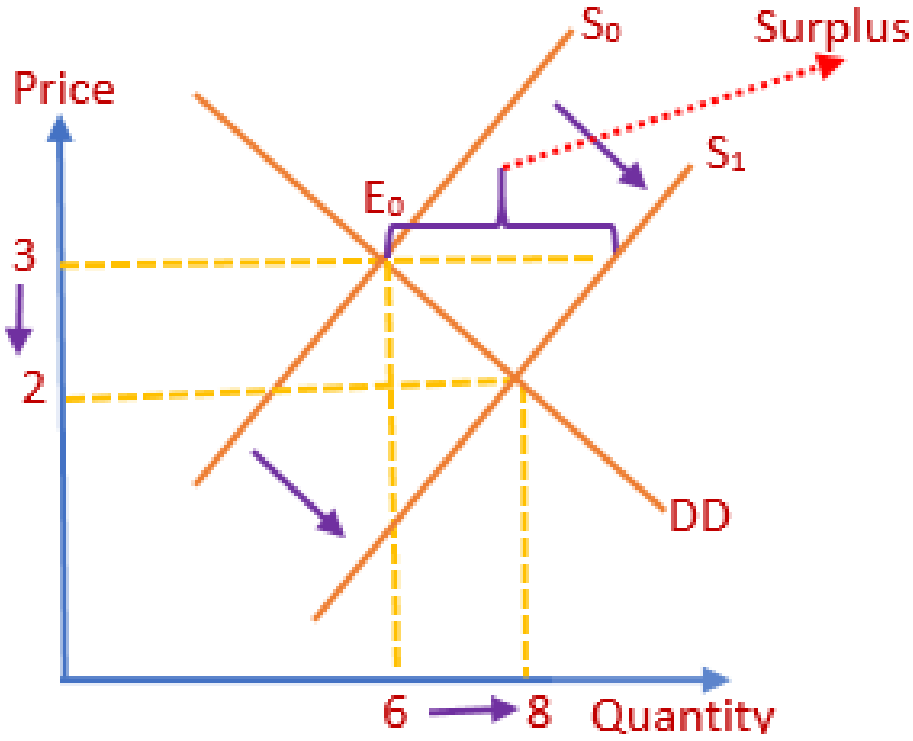


(a) Increase in demand

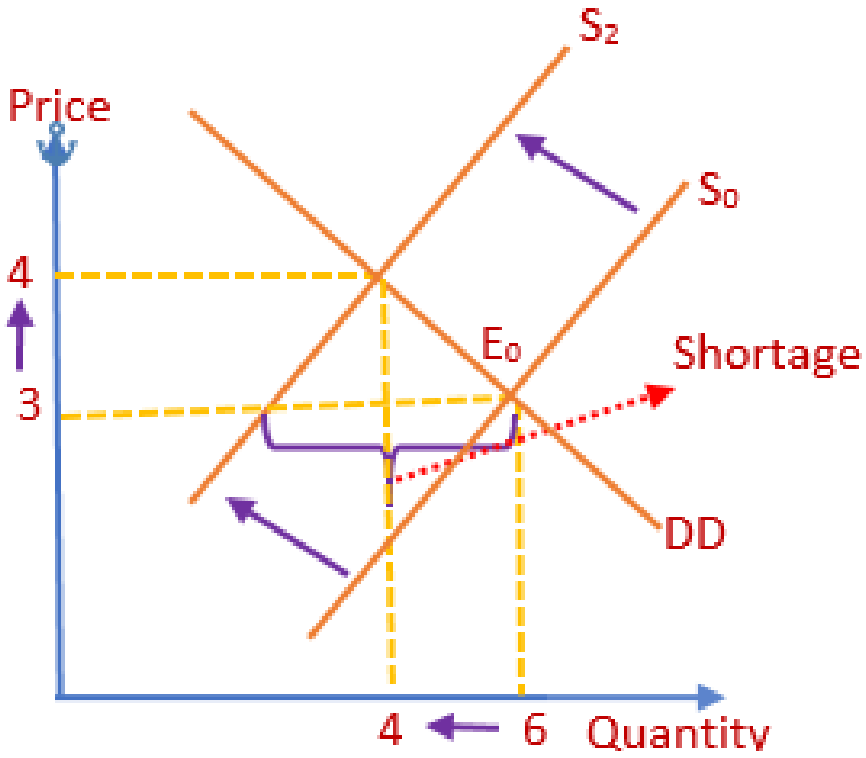


(b) Decrease in demand

Effects of Changes in Supply



(a) Increase in supply

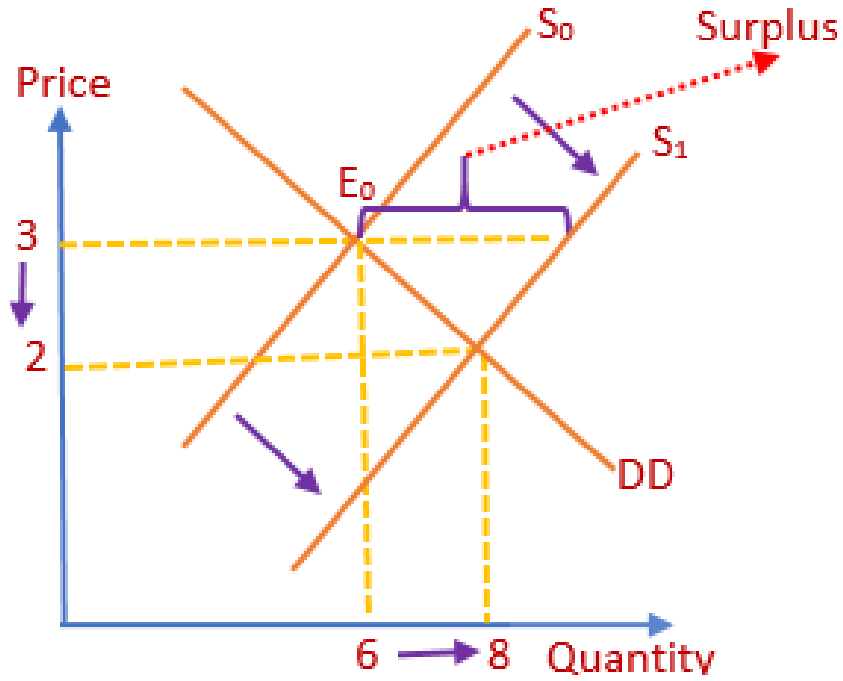


(b) Decrease in supply

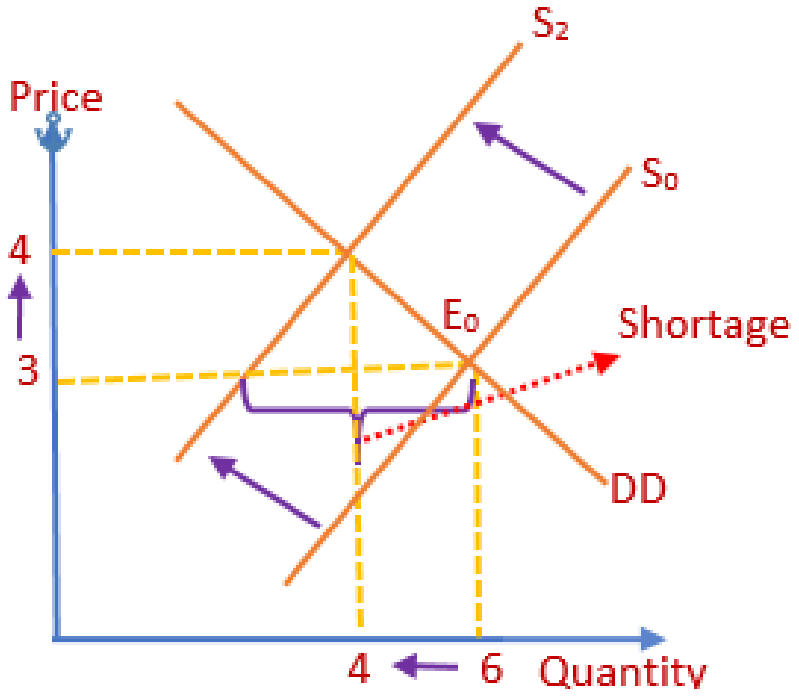
Effects of Changes in Supply

Like changes in demand, changes in supply—e.g. technology advancements, changes in cost of production, and changes in the number of sellers—can also affect the equilibrium price.

Figure shows the effects of changes in supply when demand remains unchanged.



(a) Increase in supply

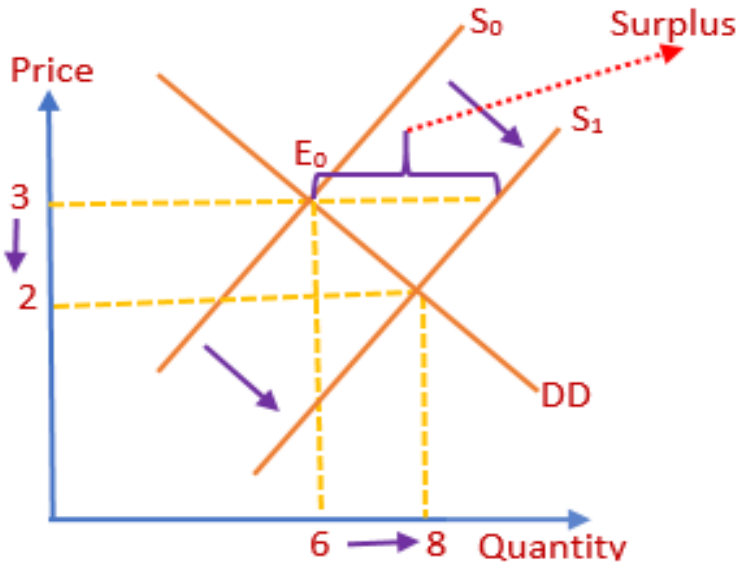


(b) Decrease in supply

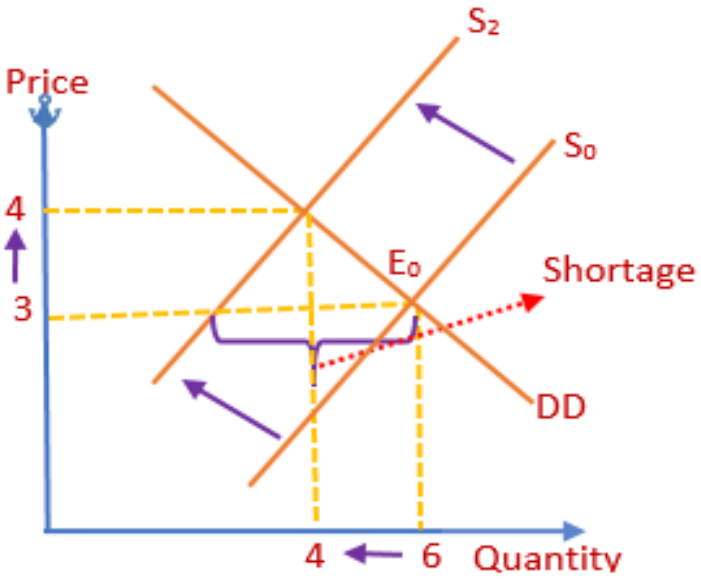
Effects of Changes in Supply

Increase in supply

- In Figure (a), SO is the initial supply curve and DD is the demand curve. The equilibrium price is Rs.3 and the equilibrium quantity is 6 units (point EO).
- Suppose there is an increase in supply for 'Pilot' pens, as shown in Figure (a); the supply curve will shift to the right (S1). At the initial price of Rs.3, there is a surplus, so the price falls and quantity demanded increases. The new supply curve, S1, intersects with the demand curve, DD, at a price of Rs.2. Thus, the equilibrium price will decrease from Rs.3 to Rs.2 and the equilibrium quantity will increase from 6 units to 8 units.



(a) Increase in supply



(b) Decrease in supply

Case 11

Tur Trades Lower On Excess Supply Side

Published on: Jun 04 2018, 04:10 AGRIWATCH

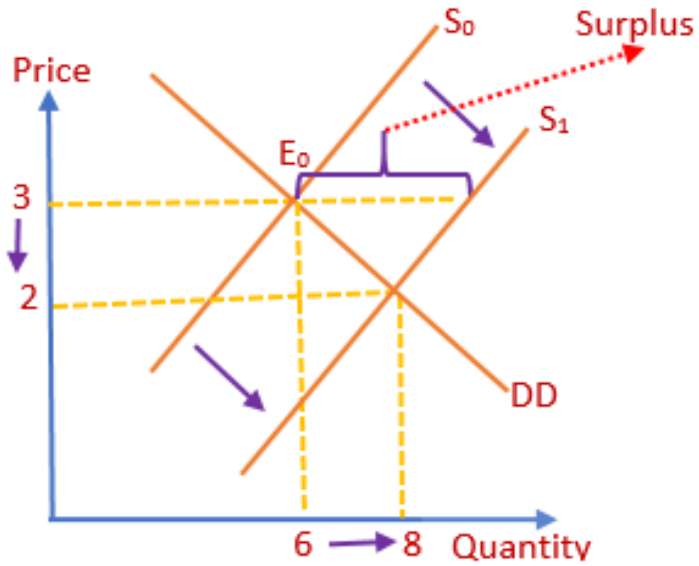
- **Burma offers Tur(new)at $465(both ols & new) per tonne** basis Indian port.
- **If 10 percent duty is applied it comes to $511.5 per tonne**.In INR term it brings costing at **Rs 3427 per qtl**.This means parity is in favour of importers.
- **Importers can import 2 lakh tonne** starting from April to March-2018.
- Besides,**1.5 lakh tonne will be imported through govt channel this year**. In domestic market Tur is being traded at **Rs 3900 to Rs 4400 per qtl.**
- Import volume, govt.'s stock would not allow market to move up continuously. **Maharshtra govt has decided to sell Tur dal at Rs.35 per kg through ration shop**. It was selling Rs.55 per kg earlier. **All these developments have put a cap on Tur market despite fear of lower area coverage.**

Analysis: When factor costs or availability increases, **the supply curve shifts to the right**. Such **rightward supply-curve shifts push prices down** the market demand curve.

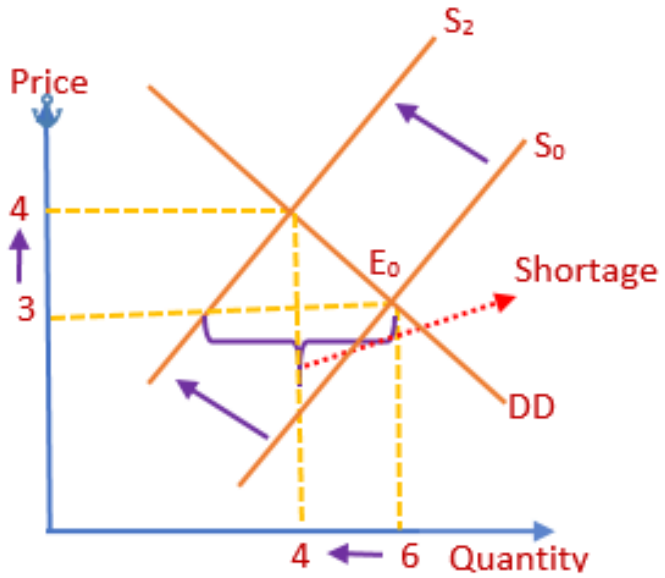
Effects of Changes in Supply

Decrease in supply

- A decrease in supply for `pilot' pens has the opposite effect on the equilibrium price and quantity. As shown in Figure (b), a decrease in supply will cause the supply curve to shift to the left (S2). At the initial price of Rs.3, there is a shortage, so the price increases and quantity demanded decreases. The new supply curve, %, intersects with the demand curve, DD, at a price of Rs.4. Thus, the equilibrium price will increase from Rs.3 to Rs.4 and the equilibrium quantity will fall from 6 units to 4 units.



(a) Increase in supply



(b) Decrease in supply

Case 12

The Indian EXPRESS

Oil spill off Mumbai coast affects fish supply

Written by Agencies | Mumbai |
Published: August 9, 2010 5:02:44 pm

Fishing Association has been directed not to go fishing as sea water has been polluted due to the oil spill.

- As a **repercussion of collision between two ships and oil spill off Mumbai coast**, **the seafood lovers here may have to abstain from their cherished food for sometime as supply of fishes will decrease further with oil polluting the sea water.**
- Fishing Association has been directed not to go fishing as sea water has been polluted due to the oil spill from cargo vessel **MSC Chitra after it collided with another cargo ship MV-Khalijia III** off the Mumbai coast Saturday.

The Indian EXPRESS

Oil spill off Mumbai coast affects fish supply

"Due to monsoon the **fishing activity has been stopped and there is very minimal supply and with this incident the supply of fishes will be hit harder**. Marine life will be affected. Enough operations have not been taken to contain the oil spread," National Fishworkers Forum's General Secretary Rambhau Patil said.

The hotel owners serving seafood as specialty anticipate **shoot up in prices due to short supply of edible aquatic animals, which already hits a low in monsoon.**

Owner of a popular seafood joint Melting Pot in suburban Vile Parle,Dhananjay Shetty said,"The incident will definitely have an **impact on the supply** and we might have to **increase the prices of sea food by 30-40 per cent**. The situation will be clear in a couple of days and after that a proper decision will be taken."

Analysis: When factor costs or availability worsen, **the supply curve shifts to the left**. Such **leftward supply-curve shifts push prices up** the market demand curve.

Effects of Simultaneous Changes in Demand and Supply

Combination 1: Supply and demand both increase

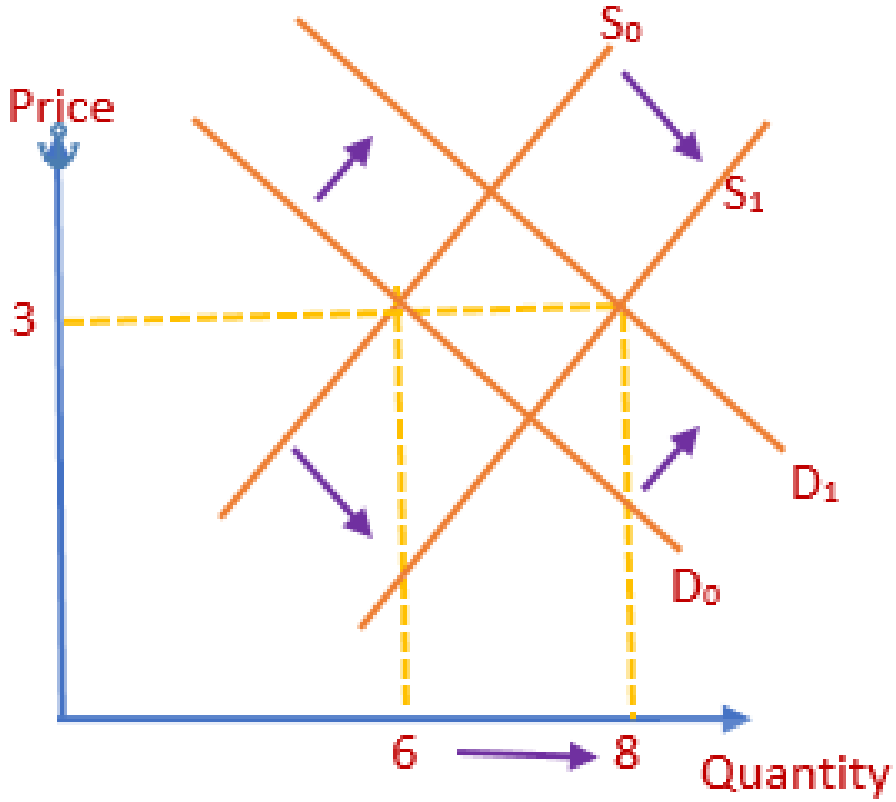
Combination 2: Supply and demand both decrease

Combination 3: Supply increases, while demand decreases

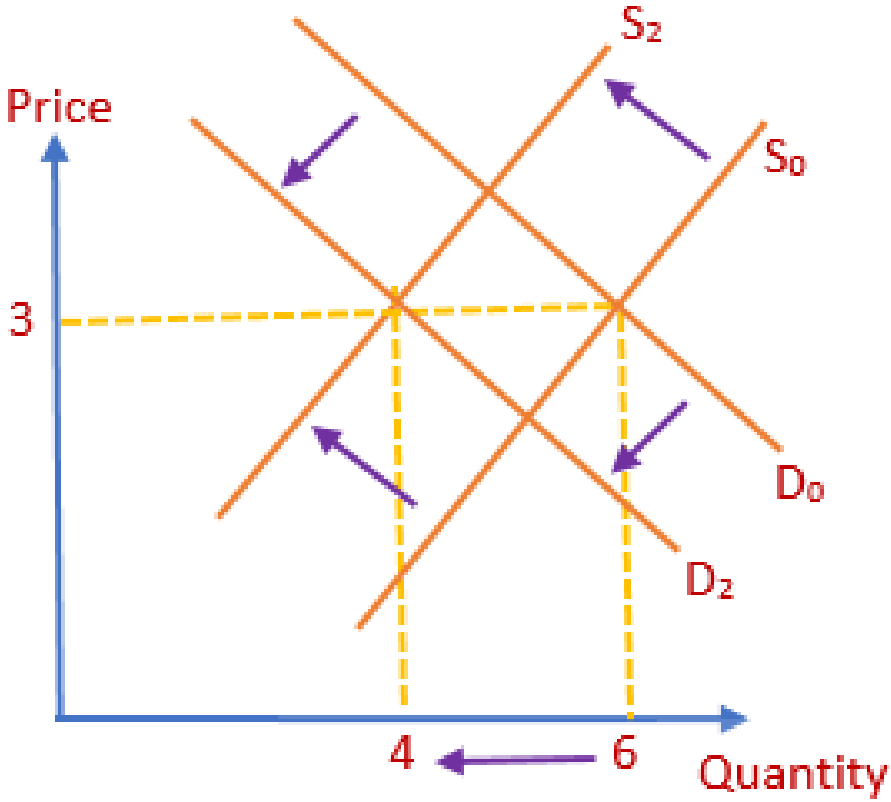
Combination 4: Supply decreases, while demand increases

Effects of Simultaneous Changes in Demand and Supply

Combination 1: Supply and demand both increase
Combination 2: Supply and demand both decrease



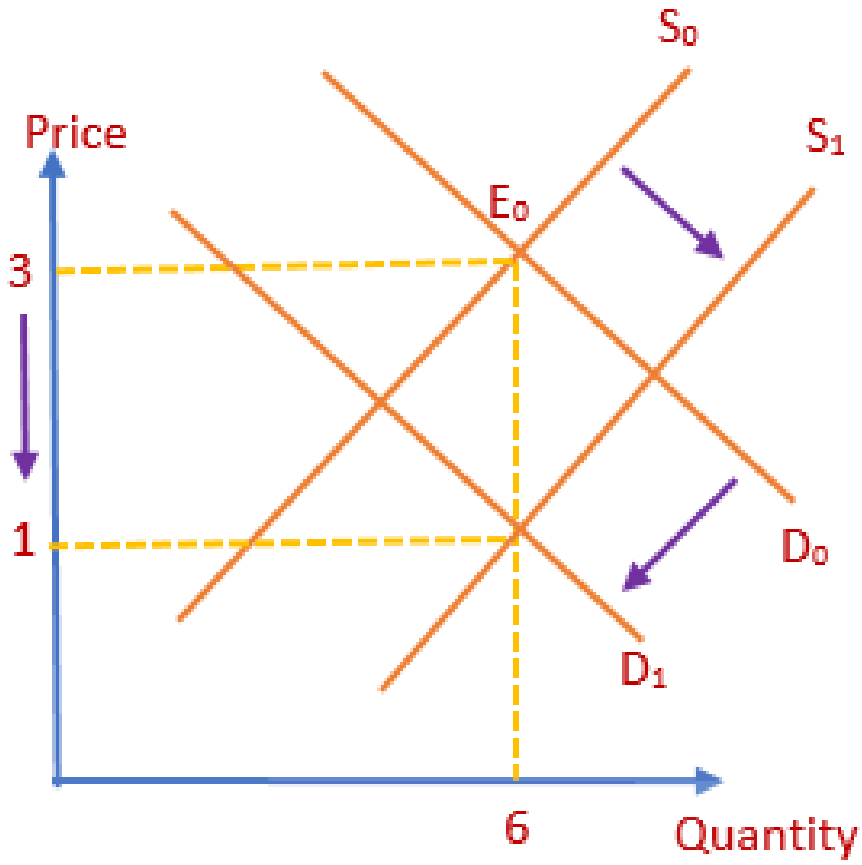
(a) Both demand and supply increase



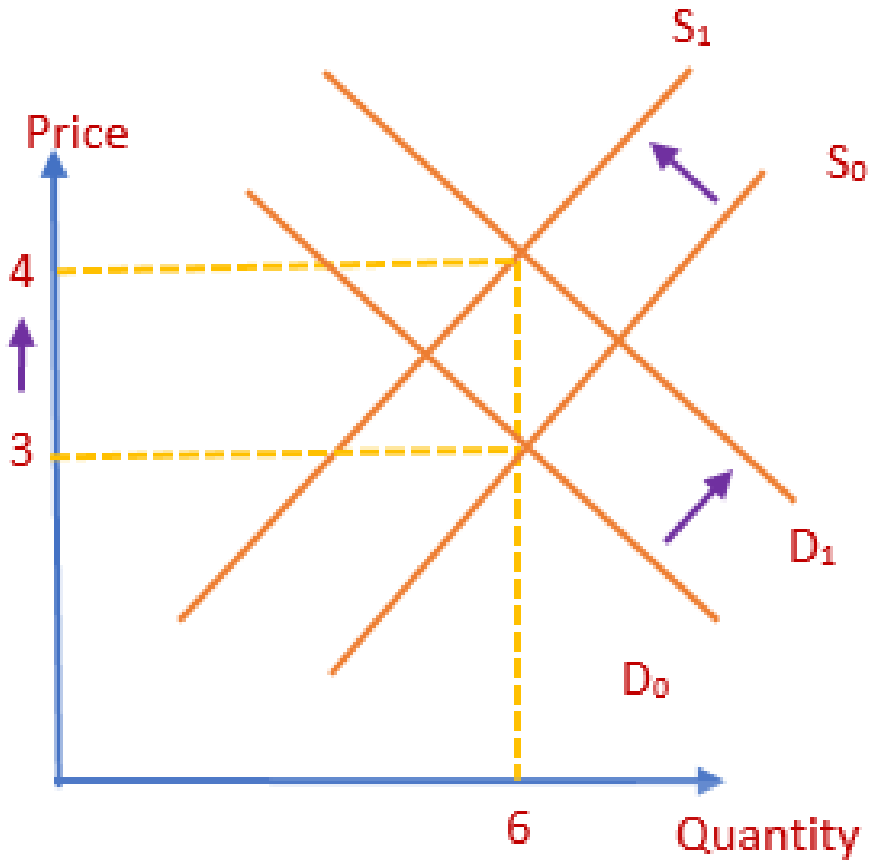
(b) Both demand and supply decrease

Effects of Simultaneous Changes in Demand and Supply

Combination 3: Supply increases, while demand decreases
Combination 4: Supply decreases, while demand increases

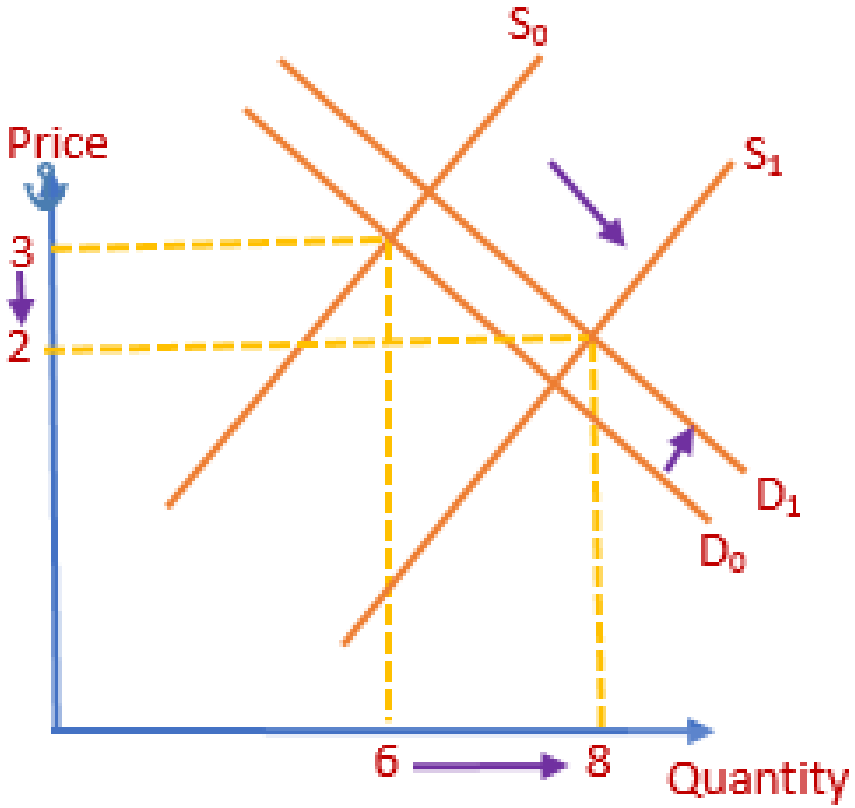


(a) Supply increases, while demand decreases

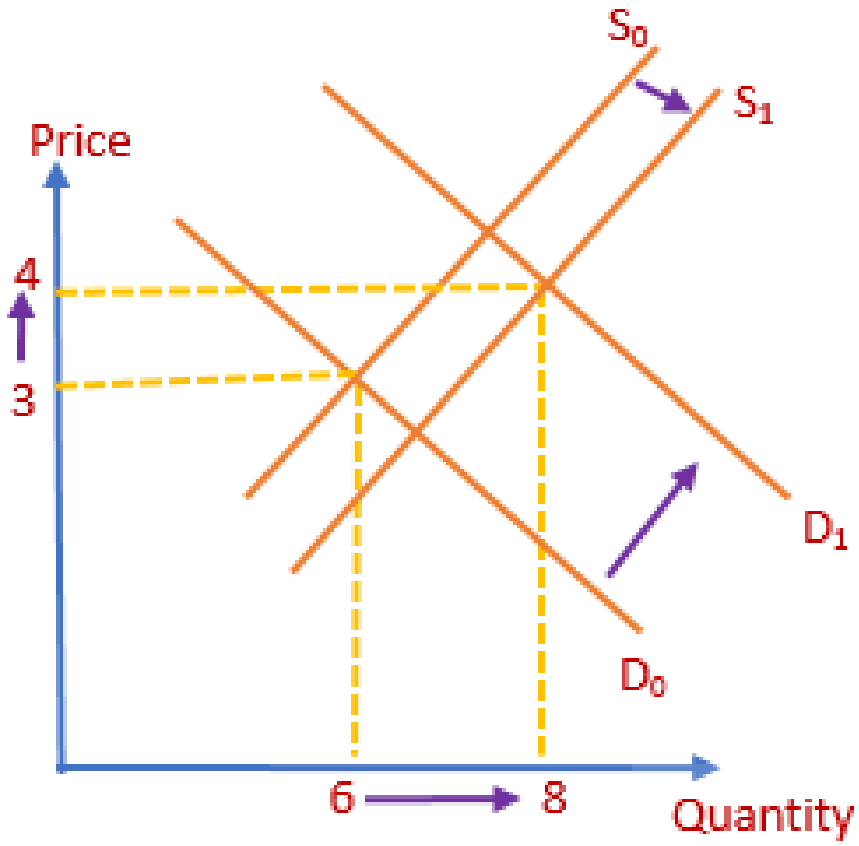


(b) Supply decreases, while demand increases

Effects of Simultaneous Changes in Demand and Supply



(a) When the magnitude shift of supply is greater than the shift of demand, equilibrium price falls and equilibrium quantity rises.



(b) When the magnitude shift of demand is greater than the shift of supply, equilibrium price rises and equilibrium quantity rises