

Is elasticity coefficient
elastic or inelastic?



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Inelastic

The price elasticity of demand for a downward sloping straight line demand curve varies as we move along the curve. If we look at the demand curve for Zesty Health Clubs, as we move down the upper segment of the demand curve, price elasticity of demand falls and total revenue rises. For example, measured over the price range of \$1030 to \$960, if price falls from \$1030 to \$960 the price elasticity of demand is 1.92 and therefore this segment of demand is elastic ($E_d > 1$). Between these two price changes, total revenue increases from \$9,936,000 to \$11,088,000. This shows that a small reduction in price in the top part of the demand curve will bring about a larger proportionate increase in the quantity demanded for Zesty Health Clubs thereby increasing its revenue.

Between the price range of \$720 to \$840, price elasticity is unitary elastic. ($E_d = 1$) and thereby total revenue is maximized. In the above relevant price level the elasticity coefficient is UNIT ELASTIC is exactly the same as the percentage in price everywhere along the demand curve.

As we move down the lower segment of the demand curve price elasticity of demand falls below a value of 1.0 and total revenue declines. Over the price range of \$480 to \$600, for example, the price elasticity of demand is 0.47 respectively and therefore this segment of demand is inelastic ($E_d < 1$).

Between these prices, total revenue declines from \$10,800,000 to \$9,600,000. This shows that a reduction in price in the bottom part of the demand curve will bring about a small proportionate change in quantity demanded for Zesty Health Clubs, thereby decreasing its revenue.

In conclusion on a straight line demand curve the price elasticity of demand is different at every point along the curve

(c) Four factors affecting the price elasticity of demand for gym memberships at Zesty Health Clubs;

Availability of substitutes

The most important determinant of price elasticity of demand is the availability of substitutes. Demand is more elastic for a good or service with close substitutes. If we look at Zesty Health Clubs, the alternatives or substitutes that consumers can switch to is relatively low. Of course there are few alternatives they could consider such as considering buying used gym equipment, renting exercise tapes, or even outdoor exercising such as swimming, cycling, running etc. Many consumers would prefer getting a membership simply just to avoid the trouble of physical stress in order to buy this stuff and also would prefer a better reliable health club when coming to health issues. Therefore the demand for Zesty health clubs is more inelastic in which the percentage change in quantity demanded is smaller than the percentage change in price, leading to an increase in total revenue.

It is also experienced that a high price charged has made the demand to be more elastic for Zesty health clubs. A price of \$1,080 has made a condition in which the percentage change in quantity demanded is greater than the percentage change in price. This may be due to the fact that considering the current recession, people's disposable income is relatively low as a result consumers have no other choice than switching to the close substitutes such as personal health training, outdoor physical activities etc.

Short run and long run effect

Most goods or services tend to be inelastic in the short run and elastic in the long run. If we take the case of Zesty health clubs we can assume that even if they uplift their price by small margin customers will still want to continue or even obtain memberships since nowadays people are more health conscious. They may be loyal to the service provided by Zesty Health clubs and may not consider shifting to the alternatives available. But in the long run consumers may be more price conscious and tend to shift to its substitutes not necessarily because price is the main factor but also due to new competitors entering the market, state of the art gym products available that could be used at home at ease, or even health tip news available daily that is sent to a customer's mobile phone provided by the network provider for a small charge. These different ranges of choices available make consumers demand shift from inelastic in the short run to elastic in the long run.

Share of budget spent on the product

Customers may devote only a certain amount rather a less proportion of income spent on membership fees. For e. g. if we consider a price change in sugar which is a convenience product consumers may pay little attention, likewise since people are more health conscious these days a change in price of membership fees may not be felt largely by consumers.

However, high membership prices such as \$1080 may force price conscious customers to switch to the alternate substitutes. Even circumstances apply where price is not the main factor, customer may prefer home training, or other physical activities which reduce the quantity demanded for Zesty Health Clubs.

Necessity or Luxury

These days consumers are more concerned about their health, therefore the demand for Zesty health clubs remain inelastic. Consumers understand that they need to be fit in order to maintain good health. As a result if Zesty health clubs peruse to increase prices the burden may not be felt heavily on consumers, as a result the elasticity coefficient remains inelastic in which the percentage change in quantity demanded is smaller than the percentage change in price. ($E_d < 1$).

However if Zesty health clubs have really high membership fees this may force the members to switch to alternatives as I discussed above such as personal health training, outdoor physical activities etc. Consumers may not have any other choice but to switch to other alternatives to suit their needs.

Assuming that the price per gym membership is \$840, Zesty Health Club will be able to generate total profit of \$9, 323, 200. If Zesty health club decides to reduce its membership price from \$840 to \$720, they would be able to obtain a profit of \$8, 622, 300. If, in case they pursue to go ahead with their business decision they would experience a 7. 5% loss on the total profit.

Another aspect that should be considered is that fact that at the price of \$840 Zesty health clubs are facing with a total cost of \$2, 168, 000, whereas if Zesty health clubs per sue to lower their price from \$840 \$720, total cost increases to \$2, 876, 100 which is an increase of approximately 33%, which is quite a huge sum. Looking at this business decision in a financial perspective it seems to that the decision is not profitable.

This business decision should not be solely made on financial aspects other relating aspects should be considered as well. If we examine the table, we could identify that elasticity changes from been unit elastic to inelastic. Zesty health clubs may wish to remain been unit elastic because price elasticity is unitary elastic. ($E_d = 1$) and thereby total revenue is maximized. This is a situation where Percentage change in quantity demanded is equal to the percentage change in price. Therefore, it will be advantages for Zesty health clubs to remain at price \$840 since elasticity is unit elastic.

However if Zesty health clubs go ahead with their business decision that is reduce the price from \$840 to \$720 they will be to attract 2290 more customers that is an increase of 16.7%, which makes then obtain a higher market share, however even if Zesty health clubs loses 2290 customers, they still have been able to maximize profits by large charging \$840. Therefore the burden is well set off by the maximizing profits.

Looking at the above evaluation of Zesty health clubs business decision, I would recommend them NOT to go ahead with the business decision as it is financially non-profitable and since they would want to remain being unit elastic rather than inelastic as total revenue is maximized been unit elastic.

Looking at the above graph, we could see that at price \$860 Zesty health clubs gets revenue of \$11,491,200 which contributes to the highest profit of \$9,323,200. At this price level profits are maximized bringing the highest profit level to them, therefore according to these statistics Zesty health clubs should charge its customers at this price since it is getting the highest benefit.

Income elasticity of demand is the ratio of the percentage change in the quantity demanded of a good or service to the percentage change in income that has bought about this change in quantity demanded, (" Economics for today", Allan Layton et al, 2nd edition, 2005). In this context it is the change in quantity demanded in memberships for Zesty health clubs to the change in income due to economic downturn which reduced average income.

Percentage change in income

EY is income elasticity of demand, Q1 and Q2 represent quantities demanded before and after the income change, and Y1 and Y2 represent income before and after the income change. (" Economics for today", Allan Layton et al, 2nd edition, 2005).

NORMAL SERVICE

From the arrived answer we can assume that Zesty health club memberships is a normal service because the income elasticity of demand is positive $E_y > 0$, the demand and income move in the same direction. Thus, the variables change in the numerator and denominator move in the same direction.

Income elasticity of demand is necessary to calculate because during a downturn when the consumer's income falls, if the membership is a normal good then the no. of memberships falls. As a result income elasticity of demand helps us to identify whether the impact brings a favorable change of a negative change and also help us identify whether Zesty health clubs membership is a normal service or an inferior service.

If we look at the relationship between average income of Australians and gym memberships we could see that there is a direct relationship. If assuming the current economic downturn is not experienced, the average income of Australians would have been stable and also disposable income may be high. This gives the chance for Zesty health clubs to increase memberships or even quantity demanded because since consumers are nowadays more concerned with their health and with high disposable income they may decide to obtain a membership.

Now assuming that the Australians are facing with a current economic downturn, which leaves peoples disposable income low, we could see that due to a reduction in average income from \$65000 to \$55000 p. a. is has resulted in a reduction in membership's form 11, 500 to 10, 600. As a result it is clearly identifiable that there is a direct relationship between income and memberships.

SECTION B

Article 1: Chile strike sends copper prices soaring

SUMMARY

The price of copper rose to 7500 US dollars per ton, the highest since August 2008, on trading on the London Metal Exchange.

The major cause was attributed to industrial action in the form of strikes in Chile's two largest copper mines. The miners wanted higher pay and better benefits. Many of them failed to show up and prices rose further after the likelihood of a strike increased fears that market supply will become tighter.

The miners wage registrations came as prices of copper rose after increases in demand from China-the world's largest consumer of copper. Prices rose over 140% aided by mounting signs of economic recovery, after the recession which reduced the demand of copper.

Chile produces one third of all copper, therefore these factors, mentioned above, played a major part in the rise of copper prices

(a) Three factors that are expected to contribute to a rise in the market equilibrium price of copper

Industrial Action

About a third of the unionized miners failed to show up when their shifts began at 2 a. m. on Monday. As a result, Chile's Codelco Company, the largest copper mining company, Chuquibambilla mine faced with a problem of less supply of copper, as not enough workers were at work mining for copper. According to the case study Weinberg added " This increases fears that market supply will become tighter". As a result of limited supply, there will be a leftward shift in the supply curve causing copper prices to rise. Therefore a new equilibrium price is formed and Chile's Codelco Company will charge a higher price at the new equilibrium.

Demand from China

The case study explains there is increased demand from china, which is the world's largest copper consumer. As a result of increased demand this makes the demand curve shift to the right, as China is willing to buy more copper (thus increased demand), which increases the price level, which forms a new equilibrium price.

Signs of economic recovery

The state of the economy can have a significant effect on the demand for copper. This is particularly true for industrial and to a lesser extent, commercial customers. When economic growth is strong, output from the industrial sectors generally increases. Conversely, when economic growth slows down, output from industrial sectors drops.

The case study explains prices of copper were propelled by mounting signs of economic recovery. As there are signs of economic recovery the demand for copper is likely to increase as a result Chile's Codelco company demand curve is likely to shift to the right. This increase in demand will result in a new equilibrium price, which is higher than before.

Considering the above demand and supply diagram (Figure 1) we could see that as a result of unionized workers failing to show up when their shifts begin, has limited the supply of copper. As a result there is a leftward movement of the supply curve from S_1 to S_2 , and due to reduced supply of copper, copper prices is lifted causing the price to rise from P_1 to P_2 . This reduction in supply and increase in price has forced the equilibrium price to change. Equilibrium price refers to the point where at any price for which the quantity demanded and the quantity supplied is equal. This new equilibrium point is E_2 which was formerly E_1 .

If we consider the above diagram figure 2, since there is increase in demand for copper from China, the demand curve in the demand and supply diagram shifts outward(rightward) to form a new demand curve from D_1 to D_2 . This increase in demand has prompted Chile's Codelco Company to increase

prices from Q1 to Q2 in order to balance demand and supply, which leads to increase in quantity demanded from Q1 to Q2. As a result of an increase in price and increase in quantity there is a new equilibrium point formed (E2) which was formerly E1.

If we look at the above diagram Figure 3, we could see that as mounting signs of economic recovery, the demand for copper are likely to increase. As a result the Demand curve (D1) shifts rightward to form a new demand curve D2. This will cause the price to increase as well from P1 to P2, since there will be a high demand for copper, this increase in price will cause the quantity demanded to increase from Q1 to Q2. The increase in price which caused an increase in quantity demanded leads to a new Equilibrium price, this is where at any price for which the quantity demanded and the quantity supplied are equal. The new equilibrium point is E2, which was formerly E1, resulted as there was increase in demand and an increase in price.

(c) Four factors which could affect world demand for copper;

Price of Copper

The law of demand, states that there is an inverse relationship between the price of a good or service and the quantity buyers are willing to purchase in a defined time period, *ceteris paribus*. If we look at this case, if copper prices increase, the demand for copper would fall and vice versa. Therefore the price determinant may affect demand for copper

If we look at the above 2 diagrams above, (A) shows if there is an increase in the price of copper from P1 to P2, there will be an decrease in quantity

demanded from Q1 to Q2. However since copper has closer substitutes and is sort of a necessity, the impact may not be large.

If we look at (B), it shows that a reduction in price from P1 to P2 has increased quantity demanded from Q1 to Q2. However thinking even though the price if copper is reduced the consumption of copper by consumers may be the same, therefore, they will not demand more than what they consume at one point.

Number of Buyers

If there are many buyers of copper, copper demand may increase, which will also cause prices to increase. In this case, Codelco produces almost 1.6 million tons of copper per year to meet its demand. If in near future companies that use copper as their raw material comes up, the demand for copper will increase. Also, if the number of buyers drops the vice versa can happen which is the demand for copper may drop causing prices to subsequently dropping as well.

If we look at the above two demand and supply diagrams, we could see that in (A) there is increased demand for copper from D1 to D2 this may be due to increased number of companies which use copper as their raw material, for e. g. the automobile industry which produces at large quantities may prefer to buy copper at large. This causes the price level to drop, which leads to higher quantity supplied.

If we look at diagram (B), we could see that demand for copper has reduced, for e. g. if we consider the current economic recession, one of the major affected industries where supposed to be the automobile industry, as a result

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the production of vehicles were reduced to a certain extent, this causes the demand for copper to drop as well from D1 to D2. Prices increase and quantity supplied drops from Q1 to Q2.

Expectations of Buyers

What is the effect in the demand when consumers anticipate future changes in prices, incomes or other factors? If e. g. if we assume the government is going to impose a tax on copper which would raise prices to a higher level, it could lead to an increase in copper demand since they may want to get the benefit of buying it at a cheaper price before the tax was imposed.

NOTE: This scenario affects demand if only the consumers are aware of FUTURE price increase in copper.

If we consider the above diagram we could see that if in future consumers anticipate a price increase in copper as a result of a tax which is going to be imposed, this will tempt them to purchase copper at large quantity now, rather than later when copper prices are high. This results in increased demand which causes the demand curve to shift to the right and price increase from P1 to P2; this leads to an increased quantity demanded from Q1 to Q2.

Prices of related goods

If we look at the substitutes for copper, which is a good that competes with another good for consumer purchase, therefore there is a direct relationship between a price change for one good and the demand for its competitor good. Substitutes for copper include, aluminum, zinc etc. If incase the price of the substitutes shot up, the demand for copper may increase since

consumers/companies may shift to purchasing copper, also there are circumstances where if prices of copper is too high they may lose it customers, causing demand for copper to drop.

(A) (B)

Four other factors which could affect the world market supply for copper are as follows;

Weather

Weather plays a huge part in market supply of copper. Bad weather that includes, heavy rain, hurricanes etc may make mining of copper not possible, as a result the supply of copper is reduced. During periods of heavy rain the supply of copper is often limited, whereas periods of great sunshine enables them to increase quantity of supply.

If we look at the above diagram (A), the exact result of a bad weather is illustrated. As a result of bad weather, the supply of copper is reduced from S1 to S2, as a result the price increases from P1 to P2, which causes the quantity supplied to reduce from Q1 to Q2. If we move our attention to diagram B we could see that as a result of good weather the quantity of copper extracted is more which means that price drops from P1 to P2 and supply increases from S1 to S2 plus the quantity supplied also increases from Q1 to Q2.

Technology

Many state of the art technology has made mining of copper much more easier, comparing to paying wages for 5600 workers, purchasing machinery

to get the work done is not only cheap but also the quantity of copper extracted could be more, which means there is increased supply

If we look at the above diagram we could see that as a result of improved technology the extracted of copper could be increased, as a result the price of copper will be dropped from P_1 to P_2 thus increasing supply from S_1 to S_2 causing quantity supplied increase from Q_1 to Q_2

Price Exceptions - If Codelco anticipates a substantial rise in future copper prices, this would cause them to decrease their current supply of copper, because they may want to gain the most of this benefit, where as if they anticipate future copper price to decrease they would want to produce more copper and sell it at a much higher price than the anticipated low price.

If we look at the above diagram, if we consider (A) we could see that if Codelco anticipates the price of copper to increase in near future, supply is restricted or reduced from S_1 to S_2 causing the price level to increase from P_1 to P_2 , as a result the quantity supplied drops from Q_1 to Q_2 . If we look at diagram (B) if Codelco anticipates a price reduction in near future, they make want to accelerate the production copper, causing price to increase from P_1 to P_2 which makes the supply curve shift rightward from S_1 to S_2 , this makes quantity supplied increase from Q_1 to Q_2 a swell.

Economies of scale/Input Costs - This is a situation in which average cost curve declines as the firm increases output. If so happens the demand curve will shift rightwards. There are circumstances where changes of diseconomies of scale could causing the completely opposite effect .

According to the case Codelco company produces around 1.6 million tons of copper per year.

Another factor that we could consider is the input prices, if input prices are low Codelco can experience economies of scale. The case study shows evidence that workers at two mines, Chuicata and Mina Sur, demanded a 7.5% pay hike. This shows that the cost of production of copper is high. If cheap labour is found and cheap machinery, cost of input is less which makes Codelco supply more copper at cheap prices.

Looking at the above two demand and supply diagram, considering (A), we could see that, if Codelco experiences economies of scale which means their average cost declines as output increases, they will be able to produce more copper at lesser costs, also aspect which could add to lower costs is due to the fact of less input costs as a result this benefit can be passed onto the consumers as well through low prices which is from P_1 to P_2 . Supply is increased from S_1 to S_2 , causing quantity supplied to increase from Q_1 to Q_2 .

Moving our attention to diagram (B) we could see that if Codelco has high input costs, this may make extraction of copper expensive, since they can't bear all the entire costs, they may wish to pass on some of it to the consumers through high costs, as a result supply is reduced from S_1 to S_2 , causing quantity supplied to reduce from Q_1 to Q_2 .