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Elasticity Sample Essays

PED, XED and YED applications

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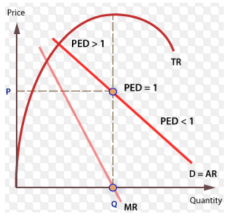
- YED across primary, secondary and tertiary sectors
- Evaluation for luxury and low-price car producers

Elasticity:

1. Explain how PED and XED can help businesses to increase revenue (10 marks)

Price elasticity of demand (PED) measures the responsiveness of quantity demanded to a change in price and it is computed as the percentage change in quantity demanded divided by percentage change in price. Cross price elasticity of demand (XED) measures the responsiveness of quantity demanded of a good to change in price of another good. It is computed as the percentage change in quantity demanded for a particular good divided by the percentage change in price of the other good. Knowledge of PED allows firm to set a price to maximize revenue while knowledge of XED allows firms to understand relationship between two goods which can be useful in many occasions.

PED is useful for businesses as it can be used to maximize total revenue of the producers. The relationship between total revenue (TR) and PED can be illustrated by the diagram below:



When PED >1, firms would like to lower price and raise quantity so as to boost revenue, reaching the maximum point of the TR curve.
This is because % increase in Qd > % decrease in P with a price elastic demand. So it is of firm's best interest to lower price.
When PED<1, firms should increase price despite the fall in quantity demanded. Since raising price would allow firms to reach the maximum point of total revenue. Given that % increase in price > % decrease in Qd, it is revenue maximizing for firms to raise price.

Thus, PED allows firms to make proper decisions and is useful for businesses to maximize total revenue. For example, since the demand for housing in price inelastic as housing in a necessity, housing producers can raise price to increase total revenue.

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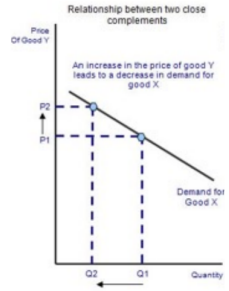
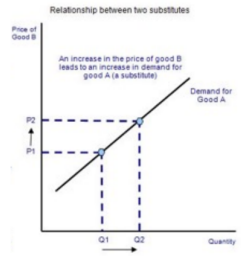
XED can help producers in making business decisions as it shows relationship between 2 goods.



When XED <0, it would mean that the two goods are complements. When price of good Y increases, the quantity demanded for good X falls. An example would be an increase in price of DVD, causing the fall in quantity demanded for DVD. Thus, with DVD players used with DVD, even when price of DVD players does not change, there is a fall in demand for DVD players, causing a fall in quantity demanded for DVD players.



When XED>0, two goods are substitutes of one another. When price of good B increases, quantity demanded of good A increases. An example would be Pepsi and Coke, when price of Pepsi increases, more people will switch to its substitute, which is Coke. As demand for Coke increases, quantity demanded of coke increases.

This is particularly useful for businesses to understand how price change in one good affect the sales of another. For example, in supermarket which sells beer and wine, substitute of each other. Increase in price of beer would lead to an increase in wine as well. Considering both PED and XED, raising the price of beer would be beneficial for businesses for both beer and wine. Since beer is relatively less price elastic and the XED of beer and wine is greater than zero. Hence, increase in price of beer would lead to increase in sales revenue for both beer and wine. This is also true for complements with XED>0, fall in price of airlines will lead to a higher quantity demanded for hotel rooms which allow travel agencies to increase revenue for hotel rooms.

Moreover, firms that sell complements can cooperate to increase each other's revenues. For example, airline companies can cooperate with hotels to offer discounts, which can increase each others's demand and revenue.

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Furthermore, knowledge of XED can allow a firm to identify its closest competitors, because its closest competitors will produce close substitutes, which will have a high XED with the firm's goods. Firms can then acquire or merge its closest competitors to increase revenue and market share. For example, Apple, which produces headphones, acquired headphone producer Beats. This allows Apple to increase market share in the headphone industry.

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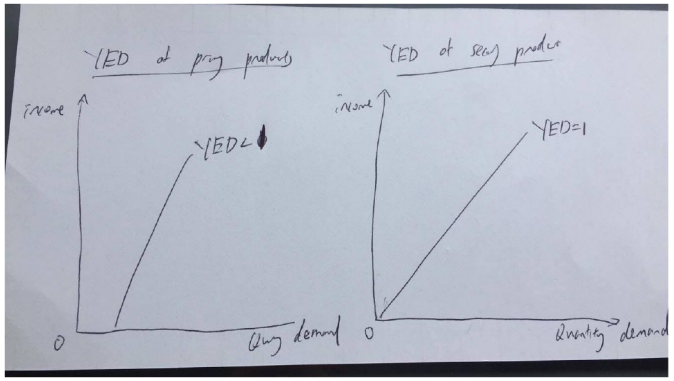
2. Discuss the significance of YED to primary, secondary and tertiary producers (15 marks)

Income elasticity of demand (YED) measures the responsiveness of demand when consumer's income changes. It is the % change in Qd over the % change in income. Primary producers are producers of raw materials like agricultural goods. Secondary producers are those who produce physical or tangible goods using raw materials from primary producers. Tertiary producers are mainly service providers, like hairdressers.

Producers of different types of production has different YED and this will be explained in the following paragraph. For primary goods like agricultural goods, in general, has a low YED. Since most of them are necessities and their YED is often between 0 and 1. Among manufacturers, some has higher YED some has lower YED within the manufacturing sector but usually for secondary producers, they have a relatively higher YED than that of primary producers but lower than that of service providers. Tertiary producers tend to have the highest YED among all the three types since most of them are not producing necessities.

This can be shown in the diagrams below.



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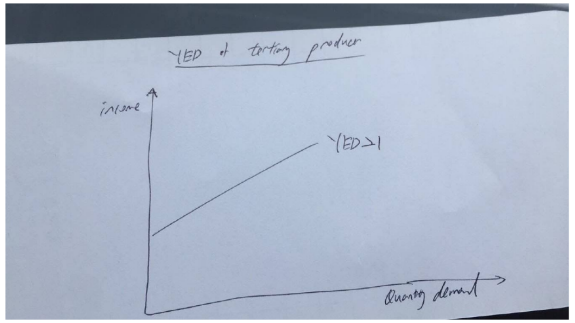

Tertiary producers are likely to have a YED larger than one. This means that the percentage change in demand will be greater than the percentage change in income. Primary producers, on the other hand, are likely to have a YED lower than one, meaning the percentage change in demand will be less than the percentage change in income. Secondary producer will likely have a YED that is in the middle. In the diagram above, it is assumed that they have YED=1. In this case, the percentage change in demand will be equal to the percentage change in income

YED affects revenue of producers in different economic conditions. When the economy is growing, income of consumers increases. With an increase in income, demand and hence revenue will rise, if YED>0. Producers of primary goods would enjoy a smaller increase in demand and revenue due to a lower YED. For manufacturers, they will face a greater increase in demand and revenue. Service providers would yield the greatest rise in demand and revenue. In a recession, income falls and demand and revenue for producers fall. Primary producers will experience just a small fall in demand and revenue. However, tertiary producers would experience a great fall in demand and revenue. This shows a more stable demand for primary goods and less fluctuation in revenue of primary producers. For tertiary producers, they face a highly volatile demand and uncertainty in revenue during different economic phases.

YED also affect the relative importance of sectors. Over the long run, income increases and the economy grows. Tertiary producers who have a higher YED will gain relative importance in the economy. This is because the % increase in spending will exceed % increase in income, meaning that higher proportion will be spent in the tertiary sector. For primary producers with low YED, % increase in income will be greater than that of spending.

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Hence, people spend relatively less in the primary sector. This can be seen in the economic growth of Hong Kong from 1960s to 1990s. Hong Kong's economy is transforming from focusing on primary and secondary sector to tertiary sector. With economic growth, the economy has placed increasing attention and focus on the tertiary sector.

In conclusion, YED is important to producers as it allows them to understand and predict how their demand will change when the economy's income changes. In the long run, it will also allow producers to predict their relative importance in the entire economy.

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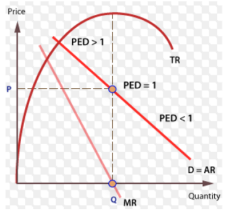
3.Discuss the importance of PED for luxury car producers and lower price car producers (15 marks)

Price elasticity of demand (PED) measures the responsiveness of quantity demanded to a change in price and it is computed as the percentage change in quantity demanded divided by percentage change in price.

Luxury car producers and lower price car producers face different PED as the proportion of income spent of the cars are very different. In general, we can say that the PED faced by luxury car producers are higher due to a higher proportion of income spent on the car. This is due to the income effect, when price rises people have less purchasing power and affordability would fall, resulting in a high PED. Therefore, the higher the proportion, the more consumers are forced to lower quantity demand by a greater extent as price rises. The reverse is true for lower price cars, with less portion of income spent on the car, the income effect will be little compared to that of the luxurious car. Consumers are facing less constraints and would not lower consumption a lot like luxurious car.

Knowledge of PED can allow car producers to increase revenue. The relationship between total revenue (TR) and PED can be illustrated by the diagram below:



When PED >1, firms would like to lower price and raise quantity so as to boost revenue, reaching the maximum point of the TR curve.
This is because % increase in Qd > % decrease in P with a price elastic demand. So it is of firm's best interest to lower price.
When PED<1, firms should increase price despite the fall in quantity demanded. Since raising price would allow firms to reach the maximum point of total revenue. Given that % increase in price > % decrease in Qd, it is revenue maximizing for firms to raise price.

Since luxury cars tend to have a higher PED as explained above, they can likely lower price to increase total revenue. For lower priced car producers, they can likely increase price to increase total revenue due to a lower PED.

PED of luxury cars is likely to be higher than lower priced cars if other

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factors are held constant. However, it wont be necessarily true when we try to consider other factors affecting PED. There are also other determinants of PED like availability of substitutes. For example, electric cars are likely to have lower PED since there are not many substitutes available. Therefore, regardless of whether it is luxury or cheap car, it has low PED. Hence, car producers cannot predict the PED of their cars purely on the basis of the car's price. They need to also consider other factors, such as the number of substitutes.

Moreover, there are many other factors affecting a car producer's revenue and profits. For instance, XED could possibly affect the sales revenue of car producers. An increase in gasoline prices will lead to a fall in quantity demanded and revenue for all car producers. Since cars and gasoline are complements, and the XED<0, a rise in price of gasoline can lead to a fall in demand for cars. Revenue could possibly be lowered with the change in price of its complements or substitutes. Besides, firms tend to maximize profits rather than maximize revenue. They also consider costs or production, even if revenue is high, it can be that the cost is high too, lowering firms' profits. Therefore, most firms do not solely look at the revenue but also the cost. They would maximize profits by producing at where MC = MR.

To conclude, PED is useful for both luxury and lower-priced car producers for price setting so as to achieve revenue maximization. It serves as an indicator for firms to decide when to raise or cut prices. However, PED cannot be only dependent on whether the car is a luxurious or a cheap one. Producers must consider other factors which would affect PED, like availability of substitutes and necessity of products. Even after considering all determinants of PED, a firm may not be aiming at revenue maximization. Instead, most firms look at both costs and revenues and focus on profits maximization. In short, there are many factors that will affect revenue and profit of firms. Hence, PED is only significant to car producers to a certain extent.