

從的士加價看需求彈性及影響

2022 年尾，天星小輪、電費及各專營巴士公司紛紛申請加價或公佈加幅，而市區的士亦繼 2022 年 7 月加價後，計劃 2023 年 1 月再度向運輸署申請起錶收費再加 5 元，由現時 27 元增至 32 元。到底，為什麼的市區的士會申請加價？而且加幅亦明顯不少。這又會如何影響市區的士的總收入，以及市民乘搭的士的平均距離？

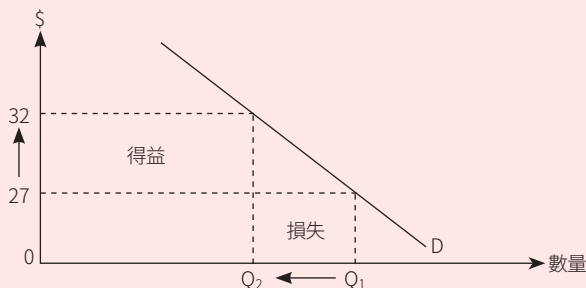
收費增乘坐量降 收入視乎彈性

於經濟學中，需求定律 (Law of Demand) 指出，當該物品的價格上升，會導致其需求量下降。因此，若的士要求增加收費，最直接的影響，便是的士的乘坐量會下降。然而，這會如何影響收入，便需取決於價格需求彈性 (Price Elasticity of Demand)。價格需求彈性，是用來量度需求量對價格變動的敏感程度。換句話說，即價格的變動如何影響需求量的變動。

市區的士於 2018 年申請加價，到 2022 年成功加價至起錶 27 元後，便立即再申請加價 5 元。由此可見，市區的士非常渴望加價。但根據需求定律，加價後乘坐量會減少，為什麼市區的士不擔心乘坐量減少會令收入減少？可想而知，的士的價格需求彈性為低彈性 (Inelastic Demand)，即需求量轉變的百分比會小於價格轉變的百分比。

從圖一可見，若需求為低彈性，在起錶收費由 27 元上升至 32 元時，乘坐量雖然減少，但由於乘坐量減少的百分比比較小，故收入下降的百分比便小於其價格上升而導致收入增加的百分比。因此，收入會上升。而亦由於這個原因，市區的士才會繼續申請加價。

圖一：市區的士加價後的影響



再者，若計算市區的士的需求弧彈性 (Arc Elasticity of Demand)，市區的士起錶收費由 27 元升上升至 32 元，亦即其價格變動為 $[(32-27) / (27+32) / 2] = 16.9\%$ 。換句話說，如果乘坐量減少小於 16.9%，那麼市區的士的總收入便會增加。

長途車程相對價格降 平均距離增

於經濟學中，相對價格 (Relative Price) 是指指兩種物品之間的價格比率，亦即一種物品的相對價格是以另一種物品為單位。舉例來說，若以往乘坐短途的士 (不跳錶) 至 X 地區為 27 元，而乘坐長途的士 (跳錶) 至 Y 地區為 54 元，那麼乘坐一程長途的士的相對價格便是兩程短途的士了。

當市區的士要求加價後，以往乘坐短途的士 (不跳錶) 至 X 地區便會由 27 元增加至 32 元，而乘坐長途的士 (跳錶) 至 Y 地區則會由 54 元增加至 59 元。根據需求定律，當價格上升，不論短途還是長途的需求量均會下降。然而，未加價前，乘坐一程長途的士的相對價格是兩程短途的士，而加價後，乘坐一程長途的士的相對價格是 1.84 程短途的士。由此可見，長途的士的相對價格下降了，因此市民會更偏向乘搭長途的士。所以，加價後，市民平均的乘坐的士距離便會增加了。

總括而言，市區的士申請加價，起錶收費由 27 元增加至 32 元，在根據需求定律的情況下，會令的士的乘坐量減少。然而，基於市區的士不斷申請加價，有理由相信市區的士的需求彈性為低彈性，因此加價反而會令總收入上升。而最後，基於市區的士暫時只申請起錶加價，令長途的士的相對價格下降，從而令市民的平均乘坐距離會增加。

必讀概念

需求價格彈性

需求價格彈性是用來量度需求量對價格變動的敏感程度。

相對價格

相對價格是指兩種物品之間的價格比率。

Price Elasticity of Demand and Its Impact From Increase of Taxi Fare

The Star Ferry, electricity charges and various bus companies have either announced or applied for increase in fares at the end of 2022. Urban taxis are also planning to apply to the Transport Department for increase in fare again right after the increment in July 2022, for an additional 5 dollars starting fare from 27 dollars now to 32 dollars. This increment is significant. Why do urban taxis apply for increase in fare? And how will this affect the total revenue of urban taxis as well as the average distance travelled by taxis?

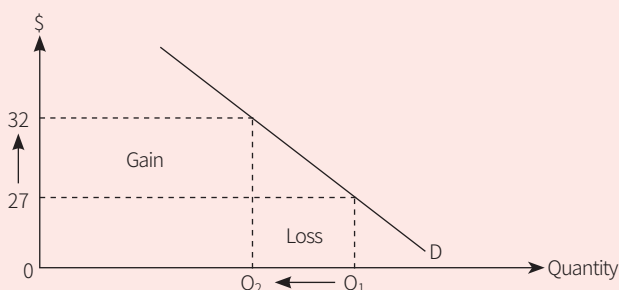
Income will be Depending on Elasticity as Higher Fare Comes with Less Passengers

In economics, the Law of Demand states that when the price of a good increases, its quantity demanded will decrease. Therefore, when taxis demand an increase in fare, the direct impact will be a decrease in number of rides by passengers. Yet, the influence of this on the total income is all depending on its Price Elasticity of Demand. Price elasticity of demand is used to measure the sensitivity of quantity demanded to changes in price. In other words, how changes in price affect the changes in quantity demanded.

Urban taxis applied for increase in fare in 2018, and immediately apply for a further increment of 5 dollars on starting fare upon the successful raise to 27 dollars in 2022. It is not hard to see the eagerness for urban taxis to raise their fares. However according to the law of demand, the number of rides will drop upon an increase in fare. Why don't urban taxis worry about the reduction in the number of rides and hence the income? It is conceivable that the price elasticity of demand for taxis is Inelastic Demand, which the percentage change in quantity demanded will be less than the percentage change in price.

It can be seen from Figure 1 that when the demand is inelastic, the number of rides decreases when the fare rises from 27 dollars to 32 dollars. However, since the percentage of drop in number of rides is relatively small, the percentage decrease in income due to it will be smaller than the percentage increase in income due to the rise in fare. Therefore, their income rise. It is also for this reason that urban taxis will continue to apply for an increase in fare.

Figure 1: impact on rise in urban taxi fare



Furthermore, if the Arc Elasticity of Demand for urban taxis is calculated, the change in starting fare rising from 27 dollars to 32 dollars is calculated to be $[(32-27) / (27+32) / 2] = 16.9\%$. In other words, if the decrease in number of rides is less than 16.9%, the total revenue of urban taxis will increase.

The Relative Price of Long-Distance Journeys Decreases and Average Distance of Rides Increases

In economics, Relative Price is the exchange rate between two goods, that is the price of one good basing on another good. For example, if it used to be 27 dollars to take a short-distance taxi to area X, and 54 dollars to take a long-distance taxi to area Y, then the relative price of a long-distance taxi ride is equal to 2 short taxi rides.

When the urban taxis increase fare, the short-distance taxi to area X will increase from 27 dollars to 32 dollars, while the long-distance taxi to area Y will increase from 54 dollars to 59 dollars. According to the law of demand, when the price increases, quantity demanded for both short-distance and long-distance taxis will decrease. However, the relative price of a long-distance taxi ride is 2 short-distance taxi rides before the raise in fare, but the relative price of a long-distance taxi ride is 1.84 short distance taxi rides after the increase in fare. The relative price of long-distance taxis drops, and taking long-distance taxis will be more preferable for the public. Therefore, the average taxi distance taken by the public will increase upon the increase in fare.

In conclusion, the application of increase in starting fare from 27 dollars to 32 dollars from the urban taxis will decrease the number of rides under the law of demand. However, since the urban taxis continue to apply for further raise in fare, there is reason to believe that the price elasticity of demand of urban taxis is inelastic which the increase in fare will actually increase their total revenue. Last but not least, as urban taxis apply only for an increase in starting fare for the time being, the relative price of long-distance taxis will drop and increase the average travelling distance by the public.

RECOLLECT

Price Elasticity of Demand

Price elasticity of demand is used to measure the sensitivity of quantity demanded to price changes.

Relative Price

Relative price is the exchange rate between two goods.