

“Price discrimination can never be in the consumer’s interest” – a Discussion with Examples

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1 Introduction

This essay will discuss the statement: Price discrimination can never be in the consumer's interest. The second Chapter will provide an overview over the different kinds of price discrimination. A brief description will be given. That Chapter will also provide how consumer's interest could be defined and measured.

The following two chapters will give some examples for cases in which the consumer's interest is either positively or negatively affected by price discrimination. As far as appropriate the examples will be based on diagrammatical analyses. The diagrams should provide an obvious prove for the written arguments. Finally, some conclusions will be made to provide a summary over the given arguments.

2 Different Kinds of Price Discrimination

Answering the question if price discrimination is or is not in consumer's interest, requires first of all some definitions. How could we compare consumer's interests and what is price discrimination?

In general, it is in societies interest to increase social welfare, defined as the sum of producer and consumer surplus. The social welfare is an appropriate measure for societies well being. According to this it must be in consumer's interest to increase their part of social welfare, consumer surplus. An increase in consumer surplus makes consumers better off.

If a producer could sell different units of output for different prices it is called price discrimination. One can differentiate three different kinds of price discrimination. According to Varian (Varian 1999) first degree price differentiation is, to sell different units of output to different people to different prices. If there is a different price for every person it is sometimes called perfect price discrimination.

Second degree price discrimination means to distinguish between buyers with different quantities. In this case the producer can't distinguish between every person, i.e. he¹ don't know every single reservation price. A typical example for this kind of price discrimination is a quantity discount.

If a producer distinguishes between different objective characteristics of consumers, e.g. age, he pays to third degree price discrimination. One example would be different prices in a theatre for children, students, pensioners and 'normal' adults.

The next chapter provides some examples of different kinds of price discrimination and will work out, if they might be in consumer's interest.

3 The Impact of Price Discrimination on Consumer Surplus

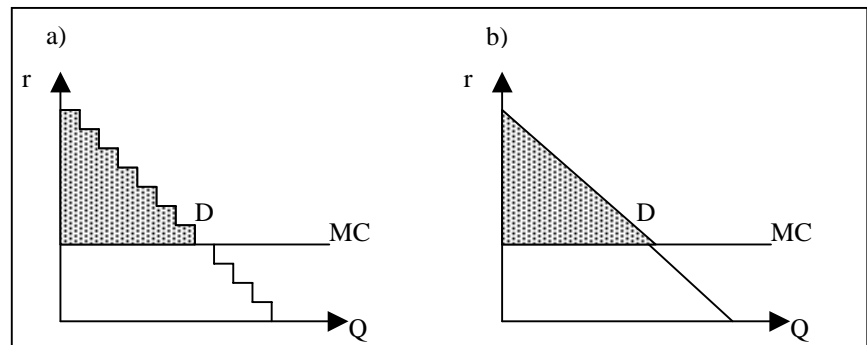
3.1 Impacts of First Degree Price Discrimination

First degree price discrimination requires that the producer know the reservation prices of every single customer. If he does, than he could sell his product to every customer for this price. All consumers will have no consumer surplus, because consumer surplus is the positive difference between reservation price and 'market' price. Although one cannot speak about a market price in the case of perfect price discrimination. As Figure 1 shows, perfect price discrimination leads to no consumer surplus, but to a social optimum because the highest possible output will be produced. Therefore, this situation is a pareto optimum, but cannot be in consumer's interest.

Figure 1a) shows a discrete demand curve, 1b) shows a typical stylised demand curve.

¹ In the following he/she, his/her will be used interchangeably and should be read as gender-free.

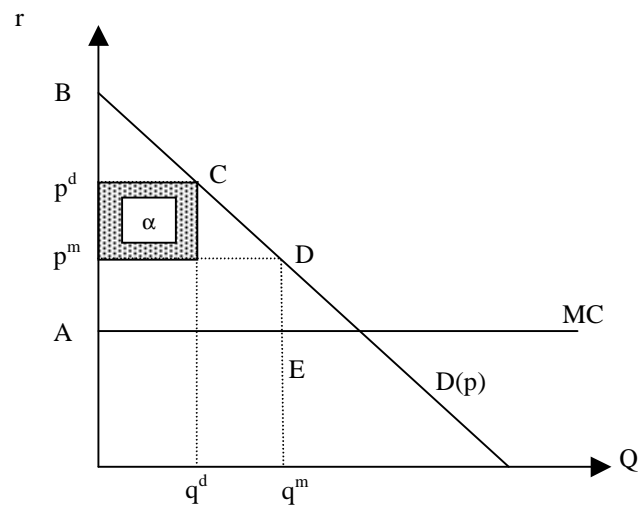
Figure 1



3.2 Impacts of Second Degree Price Discrimination

In the case of second degree price discrimination the producer offers a price menu to consumers. Depending on their preferences they get an incentive for self-selection. The producer could introduce different prices for different quantities.

Figure 2

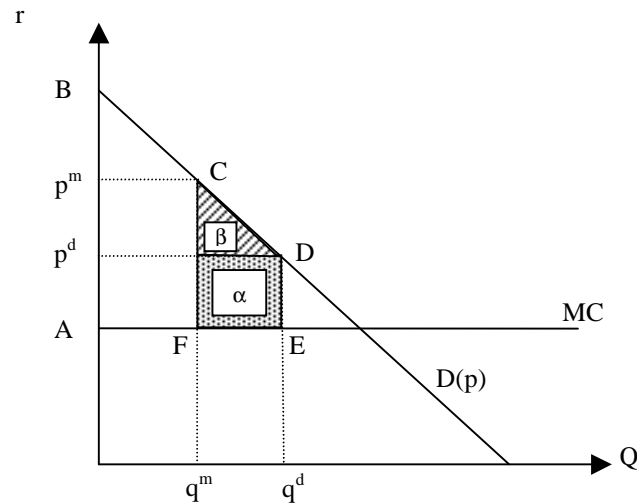


Without price discrimination producer surplus would be Ap^mDE and consumers would gain p^mBD . If the producer now introduce price discrimination and charges a higher price from low-volume customers without increasing the total quantity, i.e. he introduces price p^d for consumers, who demand q^d , he gains α as additional producer surplus. On the other hand consumers will

lose this area as consumer surplus, i.e. would be worse off. Total welfare doesn't change in this situation.

The described situation is imaginable in the short run, e.g. the monopolist could not enlarge his capacities immediately. In the long run it is assumed he could. As shown below he will.

Figure 3



If the demand function $D(p)$ has a negative slope output must increase (Varian 1985). Without price discrimination the producer surplus is Ap^mCF and consumers gain p^mBC . If price discrimination is allowed the monopolist would increase total output and has to take a lower price for the additional output, i.e. p^d . Producer surplus is now Ap^dCF plus α , and consumer surplus p^dBC plus β . Thus, producer surplus and consumer surplus both increase.

If price discrimination is allowed the monopolist must enlarge its production under the assumption of profit maximisation (Varian 1985). In this case consumers will gain some additional surplus as well. This kind of price discrimination is therefore in consumer's interest.

3.3 Impacts of Third Degree Price Discrimination

If markets could be segmented without resale permission across markets it pays to third degree price discrimination. One can take for example two cinema markets. On one market

consumers are students, and on the other market they are ‘normal’ adults. One could assume, that the students would have in general a higher price elasticity. They are more sensible on price changes, and have therefore a less steep demand curve comparing to adults.

There are two demand curves (with $i:=1=$ adults; $2=$ students):²

$$y_1 = a - bp_1$$

$$y_2 = c - dp_2$$

If price discrimination is allowed, the monopolist would face the profit maximising problem:

$$\max y_1(p_1)p_1$$

and

$$\max y_2(p_2)p_2$$

This is where marginal revenue (MR) is zero. The monopolist would produce $y_1^* = a/2$ and $y_2^* = c/2$ at $p_1^* = a/2b$ and $p_2^* = c/2d$.

Without price discrimination the monopolist would face the following demand curve:

$$y = (a + c) - (b + d)p.$$

If he maximises profits here, he would produce $y^* = (a + c)/2$ at $p^* = (a + c)/2(b + d)$. Note that total output remains at the same level.

Under price discrimination, Varian pointed out in his paper from 1985, that there would neither be a welfare loss nor a gain. The loss in consumer surplus equals the profit gain of the monopolist. As Layson (Layson 1988) proved, Varian was wrong in this case. He showed that the welfare loss equals half of the profit gain. If then total welfare decrease and profits increase, consumer surplus must decrease, and price discrimination cannot be in consumer’s interest.

That total output remains stable based on the assumption, that the monopolist supplies on each market. But this is not necessarily the case. One could imagine that the profit

² Example is taken from Varian (1999), pages 420 - 421

maximising price for aggregate demand is higher than the highest reservation price of consumers with the lower price under price discrimination, i.e. of students. That means, $p^* > c/d$, i.e. the price is above the intersection of the students demand curve with the vertical axis. Under price discrimination output would increase, because the monopolist has an incentive to sell on both markets. Then the students would gain some consumer surplus (based on the assumption, that the profit maximising price on the student market is less than the highest reservation price, i.e. more than one student will demand cinema tickets). Price discrimination is in consumer's interest in this case, too.

4 Conclusions

As shown above, one can construct examples so that price discrimination would be in consumer's interest. Is there any generality? Schmalensee (Schmalensee 1981) pointed out that one necessary condition to increase social welfare under price discrimination is that output increase. Varian examined and confirmed this argument (Varian 1985).

But, welfare increase does not necessarily mean a consumer surplus increase. Schwartz argues: if the demand curve is downward sloping, consumer surplus is always higher if output is higher (Schwartz 1990). But this is only the case under his circumstances. He investigated third degree price discrimination. Perfect price discrimination shows, that even if output increase consumers are not better off, because the monopolist extracts the whole consumer surplus.

As far as it could be investigated here, one can only say that the introductory statement: Price discrimination can never be in the consumer's interest, is wrong. It can be in consumers interest in some cases.

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