

What are the implications for economic welfare of a market structure changing from perfect competition to a monopoly charging a single price? To what extent would you modify your conclusion if the monopoly practiced price discrimination?

Market structure deals with issues that how many buyers and sellers are in the market, whether they make identical or differentiated products, and whether firms can readily enter or exit the market. Market structure is a description of the degree of competition in a market. There are four types of market structure, perfect competition, monopolistic competition, oligopoly and monopoly. The

extremes of market structures are perfect competition on the one hand, and monopoly on the other. In perfectly competitive markets, every firm is a price taker and has no influence on the market price. There are many sellers with identical products and no barriers to entry or exit. To be truly perfectly competitive, all market participants should have complete information for making optimal choices. The efficiency and economic welfare change from perfect competition to monopoly.

Assuming that there is an increasing marginal cost. In perfect competition, the supply curve for the individual firm is its marginal cost curve and marginal revenue equals price. The marginal revenue curve is also the firm's demand curve in perfect competition.

All firms maximize profit by producing the output at which marginal cost equals marginal revenue. In perfect competition, the equilibrium occurs where demand curve and supply curve intersect. The quantity produced is Q_{pc} and the price is P_{pc} . Profit is maximized at point B, the intersection of MR and MC. The amount of consumer surplus (the difference between a buyer is willing to pay and the amount the buyer actually pays) at price P_{pc} is the triangle ABP_{pc} . The producer surplus (the difference between the price that a producer is willing to accept and the actual price) is the triangle $P_{pc}BE$. At the competitive equilibrium B, both consumers and producers are efficient. Price equals marginal revenue and therefore equals marginal cost. In this situation, allocative efficiency is achieved and the economic welfare that is the sum of consumers and producers is maximized.

Now assume that the market structure changing from perfect competition to

monopoly and the marginal cost curve remain the same. Since the monopoly is a price maker facing the whole market demand curve, marginal revenue will be lower than price. In figure B, it chooses the profit -maximizing quantity at the intersection of MR and MC at point F. It then finds the price at which it can sell this quantity Q_m by consulting the demand curve. The product is sold at price P_m . The consumer surplus under monopoly is the triangle $A_p m C$ and the producer surplus is $P_m C F E$. The economic welfare is consumer surplus plus producer surplus.

Compared with perfect competition, we can see that a single -price monopoly restricts output and charges a higher price. The consumer surplus decreased to the smaller triangle $A_p m C$. This is caused by higher price and lower quantity produced and consumed. The monopoly takes part of consumer surplus. The rectangle $P_m P_{pc} G C$ is transferred from consumer surplus to the monopoly. It is not a loss to the society. But part of the original producer surplus is also lost. (Triangle $G F B$). The total welfare loss is the gray triangle $C F B$ which is called deadweight loss. Part of the deadweight loss, the triangle $C G B$, is the loss of consumer surplus. The other part of deadweight loss (triangle $G F B$) is the loss of producer surplus. Because there is less output under monopoly. Obviously, monopoly is inefficient. The total surplus (economic welfare) is smaller under monopoly than under perfect competition. There is a deadweight loss to society when market structure changing from perfect competition to

monopoly.

As well as allocative efficiency, perfect competition leads to productive efficiency. The graph below demonstrates the long-run equilibrium in a perfectly competitive market.

From the graph, we observe that price equals ATC, so the profit is zero. The firm is producing the quantity where ATC is at its minimum point. All firms wish to minimize the cost of producing a given quantity because reducing costs increase profits. If the firm did not choose to minimize the cost of producing its output by producing on its cost curves, ATC would increase and profit would be less than zero. So all firms under perfect competition are forced to produce at the quantity where its ATC is at the minimum point. But under monopoly, there is a productive inefficiency. The graph above shows the long-run equilibrium for a monopoly. Price is greater than ATC so the profit is greater than or equal to zero. The firm is not producing the quantity where ATC is at its minimum point. Therefore, the monopoly results in productive inefficiency.

On the other hand, in the long-run, monopoly has the incentive to innovation. Obviously, the innovation reduces TC and result in higher profits. The additional profit is the incentive to innovate to the firm. In perfect competition, the long-run equilibrium is where profit equals zero. If perfectly competitive firm innovates, profits rise. However, in the long-run the firm's competitors will enter the market (copy the innovation) and force profits back to zero. So there is no incentive for innovation exists in perfectly competitive markets. But if monopoly firm innovates, profits rise. In contrast to perfect competition, monopolists have no competitors because of the existence of barriers to entry. Hence, the firm will obtain the profit from innovation and will have a significant incentive to

innovate. If there is no patent system, monopoly is more efficient because they have an incentive to innovate.

The monopoly is inefficiency and creates a deadweight loss to society. Moreover, there is an additional cost of monopoly, which is called rent seeking. Rent seeking is the attempt to capture consumer surplus, producer surplus, or economic profit. There is no barrier to rent seeking. As long as the cost of create a monopoly is less than monopoly's profit, an economic profit will be earned. So there is an incentive to rent seek. When the average total cost curve shifts upwards until it touches the demand curve, the profits are zero. In this situation, the deadweight loss of monopoly is increased which includes original deadweight loss plus the lost producer surplus. From the standpoint of society, the additional costs of monopoly are wasteful because rent seeking uses resources that do not produce any wealth.

Although monopoly results in inefficiency, when it practices price discrimination, it can obtain a significant profit. Price discrimination is defined to occur whenever a firm charges different prices for a single good or service. To be able to price discriminate, a firm must have some market power and can separate market into different segments. The products it sells cannot be resold. Assume that a single-price monopoly divide its consumers into three groups. In figure C1, the rectangle ABCD is the economic profit made by the single-price

monopoly. The triangle EDC is the consumer surplus. In figure C2 the single-price monopoly practice price discrimination. The monopoly charges the maximum price that each group of consumers is willing to pay. We discover that there is an increased economic profit (the darker gray area) from price discrimination. Moreover, the monopoly captures the consumer surplus for itself. The consumer surplus has shrunk to the small gray area,

The above I have mentioned is imperfect price discrimination. When the price discrimination becomes perfect, the monopoly is more efficient than before. In perfect price discrimination, the price is decreased in order to sell a larger quantity. The monopoly sells only marginal unit at that price and subsequent units are sold for the highest price the consumers are willing to pay. In this way, the demand curve becomes the marginal revenue curve. The monopoly will still produce the output where MR equals MC. Now, since the price equals MR, it produces output where P equals MC, which is the allocative efficiency. In figure D we can see that monopoly extracts the entire consumer surplus. Producer surplus equals total economic welfare in perfect competition.

Deadweight loss with perfect price discrimination is eliminated. So perfect price discrimination achieves efficiency. "The more perfectly the monopoly can price discriminate, the closer its *output* gets to the competitive *output* and the more efficient is the *outcome*." (Economics, fifth edition, Michael P) But in perfect competition the economic welfare is the *sum* of *producer surplus* and *consumer surplus* while the *producer* gets it all *under* perfect price discrimination.

In *conclusion*, perfect competition *results* in allocative and *productive* efficiency. When market *structure* changing from perfect competition to monopoly charging a single price, there is a *de adweight* loss to the society. The *resources* are not *used* efficiently. *Meanwhile*, there is *redistribution* from *consumers* to the monopoly *producer*. *Moreover*, the monopoly leads *productive* inefficiency *because* of lack of *pressure*. *But* on the other hand, monopoly has the incentive to *innovation*. It may benefit from the *economies* of scale. From these standpoints, monopoly is more efficient than we *thought*. If monopoly practices price discrimination, the economic welfare will increase *up* to the total *surplus* in the perfect competition. The price discrimination increases the efficiency of monopoly. "The more perfectly the monopoly can price discriminate, the closer its *output* gets to the competitive *output* and the more efficient is the *outcome*." (Economics, fifth edition, Michael P) However, there is a transfer of *surplus* from *consumer* to *producer*.

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