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Econ-580 Problem Set #1

Topics on Market Power

**I Introduction**

To study market power, one has to study how markets function and when market failure will arise so that firms can obtain market power. Since the functioning of the market is a key concept of microeconomics, learning topics around market power is an effective way to understand how do firms make their decisions in the microeconomics content. This paper will cover some important topics about market power; Section II will define what market power is, Section III will introduce the sources of market power, Section IV discusses how firms and government view market power, and some tools that economists use to measure market power will be discussed in Section V.

**II Definition of Market Power**

Briefly, market power is the ability of firms to charge at a price over the marginal cost of production and gain sustainable profits. While in the real world, it is common to observe firms making money from their business, it is not the same in microeconomics world. We define that market is efficient when it is perfectly competitive and each firm will charge at the marginal cost so no firms in the market will earn profits in this case. On other words, a firm with market power can charge at a price higher than other competitors without losing all sales and creates profits with the higher price. In this case, the market is inefficient and there could be some potential issues.

Since demand curve is downward sloping, when firms with market power increase charged price, people who are most price sensitive will consume less or not at all. In this way, compared to the perfectly competitive market, part of consumer surplus is eliminated due to decreased amount of consumption, and the extra profits captured by firms cannot offset the loss in consumer surplus, thus total social benefit has been hurt.

It needs to be mentioned that market power is not the same as monopoly power, although monopoly always owns great market power. In one single market, it could exist only one firm that has market power, as a monopoly or a monopsony (in this case, the firm could employ factors of production with lower price than marginal revenue); it could also exist several firms that they all have some market power at the same time, which is the case of oligopoly. It is not crucial that how many firms have the control of market power, but the ability to determine the equilibrium price in the market in order to maximize profits.

**III Sources of Market Power**

Market power appears when there is a lack of competition in the market, as consumers do not have enough alternative choices when the firms increase the price. Such reduced competition has several sources. This section will introduce several common sources of market power, as economies of scales, high entry barrier and lack of supply in the specific market.

First of all, economies of scales play a big role in the appearance of big companies which hold market power in many markets, like telecommunication, manufacturing industry and so on. The property of economies of scales means that there is a diminishing marginal cost of production, so the more firms produce, the less it will cost them for the extra unit they produce. People can easily imagine that under such assumption, firms which enter the market at first will gain a first mover advantage in production cost over other late-entrants, so they can provide cheaper offers in the market and beat their competitors. As a result, only one monopoly or few oligopolies will survive till the end in a market with economies of scales, other firms eventually quit the market in the long run because their marginal cost is always higher than the first-come ones.

A famous example of a monopoly that appears because of economies of scales is the original AT&T (American Telephone and Telegraph Company). When it was established in 1874, the company had the patent of telephone. While the patent rights expired in 1894, during the 20th century, AT&T still grew into the monopoly of telephone in the US market. Without protection of patent rights, other competitors could freely enter the market and compete with AT&T. However, telecommunication business had a typical diminishing marginal cost mechanism. As far as the telephone network reached big cities, AT&T’s marginal cost of having one more customer in the system was almost zero. Meanwhile, the late-come companies had to build new networks and the cost of new networks reflected in a higher price than AT&T. In this way, AT&T remained as a monopoly until it was broken up by government in 1984.

The second source of market power is the high entry barrier in the market. The high entry barrier could be found in various aspects. For example, in the semiconductor industry, if a firm wants to startup, they must have the technology to produce similar level products as Qualcomm does, but Qualcomm’s technology is too advanced that few companies could match it. The barrier could also appear in capital requirement, like investment banking business requires new entrants to control huge amount of capital to operate the business. The entry barrier could also appear as regulation in the market that government gives permission to specific firms to produce and other firms cannot enter the market at all. With the high entry barrier, leaders in the market will find number of competitors is very small so customers do not have many choices, so these firms have the market power.

The third source that generates the market power is lack of supply in some markets, for example, diamond market and the leader in that industry, De Beers. De Beers sells approximately 35% of the world rough diamond currently, and used to be the monopoly in diamond industry in the last century. The reason that this company gained so much market power is simply that the scarceness of diamond. De Beers first found and occupied some big diamond mines in South Africa and these diamond mines became almost the only source of diamond in the world during the early 20th century. To make their market power more solid, De Beers set up a cartel and persuaded every single diamond producer to join their cartel. They even purchased diamonds from other producers to control prices by limiting supply. With the manipulated lack of supply in the diamond market, De Beers easily controlled the price of diamond and remained its monopoly position throughout the 20th century.

There are several other sources of market power that exists in the very specific market, such as vertical restraints in the market where production and sales process have different level. However, the three sources listed above combined could explain most of the market power cases in the real-life world, and sometimes they are overlapped in some cases. Understanding the sources of market power is important to design antitrust law and competition policy, because each market needs specific policies to limit the different type of market power so that competition could sustain at a beneficial level for society.

**IV How People View Market Power**

As the utilizer of market power, firms view market power as the goal they want to approach. In most markets, due to competition, market power is hard to gain since a little increase in price will make firms lose a large part of their consumers. However, in markets that have high concentrated market share within few firms, market power is the most effective tool to improve firms’ profits. For firms, it is rational to implement every possible market power they have to increase their benefits.

However, individual consumers in the market would be harmed by the market power, as explained Section II. Market power creates profits for firms through extorting the equilibrium price in the market and exploiting consumer surplus, so consumers need to be cautious about whether a market is controlled by the firm(s) with market power. Usually, if consumers find they do not have choice on the products or they can only choose between few similar products, they need to pay attention to whether market failure exists and the price may not reflect the true value of that product. Meanwhile, it is also possible that some monopolistic firms have better research and development ability so that they can apply more advanced technique into their products. Consumers could gain benefits from the new products and such extra utility may offset the higher pricing operated by the firms.

For government agency, they need to focus on whether market power decreases competition in the market and decrease the market efficiency. It is important for government agency to consider more comprehensively and take into account of long-term benefits. This is because the effect of market power on social benefits is ambiguous: in some markets, firms utilize the market power and make harm to consumer surplus; in other markets, like electric and water market, a monopolistic firm is somehow essential because of the externality of a stable market price and supply. Using regulations and competition policies, the government should design the market in a way that firms would not use market power to exploit consumer but create benefits for the whole society.

**V Measurement of Market Power**

To measure market power is a difficult thing since the marginal cost of production is hard to calculate in the real world. Firms create the revenue not only through production, but also from advertising, brand value and other operations, and the cost also include production cost as well as other costs spent in research, advertising and so on. Instead of calculating how much market power one firm occupies, people can estimate the concentration of the market to estimate how much market power is generated in the market. The Herfindahl-Hirschman Index (HHI) is a measure of market concentration which is calculated by squaring the market share of each firm competing in a market and then summing the resulting numbers. If HHI is bigger than 0.5, it could be said that firms in the market have a considerably big market power. As economists, we could also estimate the elasticity through data of demand and supply, and then apply it to the formula of Lerner Index to calculate the markup that firms capture through the sales.