

Innovation Product Dynamics on The Oligopoly Market

Fitriasuri, H. Kuzery

Faculty of Economics
Bina Darma University
e-mail: fitria7878@yahoo.com
e-mail: hasankuzery@mail.binadarma.ac.id

Abstract

Oligopoly market conditions led to intense competition among companies. However, the number of firms involved in oligopoly markets is relatively small. Consequently there is the possibility of inter-firm price agreement. This will benefit the company but highly detrimental to consumers in the long run. On the other hand oligopoly market opens great opportunities for the development of technological innovation and encouraging companies to become better and more efficient. If this is the case then the consumers benefit and ultimately bring better welfare. Innovations in practice are influenced by many things. Innovation will increase in small quality gap or high competition, and conversely decreases when the quality gap wider. Under conditions of high competition, companies are efficient in production, have more incentive to innovate and otherwise at low competitive conditions less efficient companies to carry out more incentivizing innovation. Innovation is also influenced by the structure of trade unions in the company on the oligopoly market. In oligopoly companies with centralized unions and large, innovation is higher than in the case of a decentralized independent union.

Keywords : *Innovation, Product, Oligopoly Market*

1 INTRODUCTION

In general, a company must have a competitor, but in some cases if it's not high competition, companies typically try to not only be the recipient of prices (price taker). The situation is known as imperfect competition market (imperfect competition) is a situation that occurs when the number of sellers and buyers relatively little. Sometimes the number of sellers and buyers is only one (Mania, 2000). Oligopoly is a market situation of imperfect competition where there are few sellers (2-10) that dominate the market and offer products that are identical to each other and there is interdependence (Boediono, 1982). In the anti-monopoly law definition of oligopoly is not clearly defined, but in the article 4, paragraph 1, oligopoly established through an agreement, namely that "entrepreneurs are prohibited from making agreements with other businesses to jointly controlling the production and marketing of goods or services which may result in monopolistic practices or unfair competition". Meanwhile,

in article 4, paragraph 2 states that, businessmen suspected or considered jointly controlling the production and marketing of certain goods or services, where two or three business actors control over 75 % market share of a particular type of goods or services .

Thus the provisions of Article 4, paragraph 1 and 2 are the rule of reason, which means allegations against two or three business actors perform a market share of 75 % still require verification by the Commission whether there is a monopoly or unfair competition (silalahi, in rahmawati, 2009). Oligopolistic market has only a few sellers; the striking nature is going on strong attraction between companies or vendors who work on the markets proficiency level. Proficiency level of their cooperation in the market can be compromised by producing at low output levels and emphasizing the price above marginal cost. But each company often tries to achieve their own interests without regard to the other company's profits. So that this condition gradually weaken their power (Mankiw, 2000). Therefore, the strategy adopted by employers in oligopoly markets usually follow a competitor , if the businesses that dominate the market raise the price then the other automatically also raise the price , and vice versa .

But unlike the duopoly market where there are only two businessmen assumption. If one manufacturer raises its price then the others will follow by lowering the price of their products as well, but if one manufacturer raises its price then other manufacturers will not follow such a strategy. That is because, if a producer price increase and the others did not follow it does not raise the price, then producers who have raised the price will lose sales and demand for its products will decline sharply (Sunaryo, 2001). Homogeneous products will lead to greater dependence on the company's dominant company policy on prices. Besides differences in product specifications (product differentiation), will lead to higher chances of competition among business actors. This avoids competition agreements between businesses that harm consumers.

Indeed oligopoly market is more harmful to society when compared to a perfectly competitive market. That's because in a perfectly competitive market welfare optimum can be achieved. In a perfectly competitive market, customer satisfaction as well as to maximum advantage in producing goods producers because the minimum cost can be achieved (Rahmawati, 2009). Although it is difficult to achieve a perfect welfare, analysis of perfect competition it could be a requirement for the achievement of an optimum welfare (Boediono, 1982). Oligopoly market effects like monopoly where a manufacturer can reap excessive profits (excess profit) in the long term, which means there is no justice from the manufacturer to the consumer. But the other side of oligopoly competition brings new innovations for the most advanced firms in an oligopoly market vying to find something new in terms of production. The author of this paper would like to discuss the dynamics associated with these innovations include things that influence it.

2 COMPETITION AND INNOVATION PRODUCT, IN CASE OLIGOPOLY

Innovation is believed to encourage the consumer welfare and firm profitability. Even the smallest innovations can lead to changes in the welfare of society (Goettler, 2013). Therefore, economists trying to understand what drive innovation in general or specifically whether competition encourages innovation. Despite this theoretical literature on this subject remains ambiguous because some states considered positive relationship (Arrow , 1962; Nickell , 1996) and several expressed a negative relationship (Schumpeter , 1942) , and other states inverse relationship (Scherer , 1967; Aghion et al, 2005).

According to a review of empirical literature Gilbert (2006) found that most relationships are created because of the dependence of the industry such as product substitution, entry fee, and an excess of innovation. Although the innovation incentive is influenced antitrust and merger policy (DOJ - FTC, 2010), the academic community has not been able to determine a tool to evaluate innovation policy. Many approaches to researching innovation incentives such as fixed market structure (e.g., Reinganum , 1983 ; Doraszelski , 2003 ; Ofek and Sarvary, 2003 ; Aghion et al , 2005) , exogenous to the various market structures (eg , Spence , 1984 ; Goettler and Gordon , 2011), or static settings (eg , Vives , 2008).

Goettler develop a more dynamic approach in which the endogenous market forces determine the long-term market structure (or steady-state) and the rate of innovation is a dynamic oligopoly model, based on Pakes and McGuire (1994). At this level the development of long-term innovation depends on consumer preferences, cost the company and process R & D. In this study, Goettler use the model to evaluate the innovation of three measures of competition: cost, product substitution, and innovation advantages. According Goettler (2013) found an inverse relationship result / U substitution between products and innovation. Innovation initially increased for all companies but eventually, as the market determines that the winner takes all the advantages, and then other companies slowed and gave up chasing the market leader. Increasing the portion of inverted - U reflects a change in the functioning of the company's investment policy, while the portion of the decline appears on enterprises with wider quality gap.

3 STRUCTURE OF LABOR UNIONS AND INNOVATION

The interaction between product market and labor market oligopoly has been studied in the recent literature from different perspectives (e.g., Davidson, 1988; Dobson, 1994; Dowrick , 1989, 1993). Emphasizes the role of labor contribute to the structure of wage negotiations on the outcome of labor and product markets. Callabuig (2000) have investigated the influence of union organizational aspects of innovation in the companys decision, in the context of duopolistic competition Cournot model. This study identifies the conditions under which the incentive to innovate is higher in industries that have broad and centralized union, compared to the case of decentralized independent unions. In accordance with some previous literature, one by Tauman and Weiss (1987), who analyzed the incentives to adopt new technology by companies duopolistic with union and non- union companies? They show that the company union may have a higher incentive to adopt new technologies than non- union company. Instead callabuig (2000) showed that strong unions can stimulate innovation even if the two companies had the same initial technology. Also associated with the model Ulph and Ulph (1994), with the basic insight that innovation is very dependent on the shape of enterprise bargaining (wages or / and work) with the union. In this model it appears that innovation is relatively higher in companies with centralized union than in the case of independent unions.

4 POSITIONING STRATEGIES IN CASE OLIGOPOLY

Using innovation to compete with most of the discussion is the concept of innovation time . Research and development activities are a key factor to achieve innovation. Diaye (2013) tried to identify the competition in an oligopolistic industry with research focused on deterministic models. The first objective of the paper is to identify the determinants of positioning strategy in the telecommunications industry ' in Senegal, which experienced a

recent liberalization. With deterministic models, there is no uncertainty and the concept of the commercial value of innovation to be introduced. This concept is defined as the highest bid that the company is ready to offer innovation. This research focuses on the choice of deterministic models based on analysis of the consideration, which means that the industry is only dependent on the positioning strategy in accordance with the reaction of competitors. Thus, the second objective is to analyze the precarious position of the first companies to obtain innovation. In other words, here trying to understand whether companies acquire innovation (first) is compared with the company's leading edge (follower). This question also leads to the identification of the optimal time to introduce innovations such a case the company symmetrical and asymmetrical enterprise. This difference is related to the fact that the company is symmetric, each valued in accordance with the effort in R & D. In other cases, companies are distinguished by their efficiency in producing, and Encourage innovation by replacement effect (Arrow, 1962). In this context, the incentive from the company to innovate is directly related to the cost of R & D.

The result (Diaye, 2013) suggests that there is competition between companies either symmetric or asymmetric. The first case revealed that the non - equilibrium occurs which leads to the disappearance of the cooperative nature of the company on rent innovation. Independent firm investment strategy at least shows there is at least one company that acquires innovation. In this condition, the innovative company (first mover) has the advantage over the company followers. Therefore, if the company has the same opportunity to acquire innovations, innovative companies tend to be in the forefront. Instead, the company that there is asymmetric competitive advantage for at least one of the existing companies. In this case, when the company has a production cost differences before the innovation, the most efficient companies will be at the forefront of the competition. The Company's first mover back has a higher incentive to innovate. In the case of the telecommunications industry in Senegal (daiye, 2013) ruled the company maintains its leading position in the competition. Conversely, when the level of competition is low, less efficient firms have a higher incentive to acquire innovation. In addition, the interpretation of the model in the case of the telecommunications industry Boone Senegal stressed also that the negative relationship between effort in R & D and innovation gained time. Thus the hypothesis Stewart (1983) that the winner takes all advantages is true.

5 CONCLUSION

Innovation Development in Oligopoly market structure is very important in order to suppress the negative effects of the market structure. But innovation must be considered in the development of the effects of several factors that innovation can be the optimum. Some aspects related to the innovations such as the level of competition, product quality, cost efficiency and state -level union. Innovation will increase if the quality gap is small or in other words, increased competition and instead will decrease when the quality gap wider. Under conditions of high competition efficient firms have more incentive to innovate and otherwise at low competitive conditions less efficient companies to carry out more incentivizing innovation. Innovation also influenced the structure of trade unions in the company oligopoly. In oligopoly companies with centralized unions and broad innovation is higher than in the case of a decentralized independent union.

References

- Arrow, K., (1962), *Economic Welfare and the Allocation of Resources for Invention,*” in R. Nelson, ed., *The Rate and Direction of Inventive Activity* Princeton, NJ, Princeton University Press.
- Aghion, P., N. Bloom, R. Blundell, R. Griffith, and P. Howitt, (2005), Competition and Innovation: an Inverted-U Relationship, *The Quarterly Journal of Economics*, 120 (2), 701-728.
- Boediono, (1982), *Ekonomi Mikro*. Yogyakarta : Penerbit Fakultas Ekonomi Universitas Gajah Mada.
- Calabuig, V., Maestre, M.G.,(2000), *Union Structure and The Incentives For Innovation in Oligopoly*, *Instituto Valenciano de investigaciones Economicas*. First Edition.
- Davidson, C., (1988), Multiunit Bargaining in Oligopolistic Industries, *Journal of Labor Economics* 6, 3, 397-422.
- Diaye, Babacar. N., and Thiaw, C.,(2011), Positioning Strategies In Case Of Oligopolistic Competition: The Case of Telecommunications Industry in Senegal, *african journal of business management (academic journals)* 5, 16, 6651-6656.
- Dobson, P., (1994), Multifirm Unions and the Incentive to Adopt Pattern Bargaining in Oligopoly, *European Economic Review* 38, 87-100.
- Department of Justice and Federal Trade Commission, (2010), Horizontal Merger Guidelines, <http://ftc.gov/os/2010/08/100819hmg.pdf>. accessed on 10/24/2013 from
- Doraszelski, U., (2003), An R&D Race with Knowledge Accumulation, *RAND Journal of Economics*, 34(1), 19-41.
- Dowrick, S., (1989), Union-Oligopoly Bargaining, *Economic Journal* 99, 1123-42.
- Dowrick, S., (1993), Enterprise Bargaining, Union Structure and Wages, *Economic Record* 69, 207, 393-404.
- Gilbert, R., (2006), Looking for Mr. Schumpeter: Where are We in the Competition-Innovation Debate? in A. Jaffe, J. Lerner, and S. Stern, eds., *Innovation Policy and the Economy*, Vol. 6.
- Goettler, Ronald L., Gordon, Brett R., (2013), Competition and Product Innovation in Dynamic Oligopoly , Quantitative Marketing and Economics, Forthcoming. Available at SSRN: <http://ssrn.com/abstract=1944933> or <http://dx.doi.org/10.2139/ssrn.1944933>
- Goettler, R. L., B. R. Gordon., (2011), Does AMD Spur Intel to Innovate More?, *Journal of Political Economy*, 119(6), 1141-1200.
- Mankiw, Gregry N., (2000) , *Pengantar Ekonomi*, Jilid 1. Jakarta : Penerbit Erlangga.

- Nickell, S., (1996), Competition and Corporate Performance, *Journal of Political Economy*, 104, 724-746.
- Ofek, E., M. Sarvary., (2003), R&D, Marketing, and the Success of Next Generation Products, *Marketing Science*, 22(3), 355-370.
- Pakes, A., P. McGuire., (1994), Computing Markov-Perfect Nash Equilibria: Numerical Implications of a Dynamic Differentiated Product Model, *RAND Journal of Economics*, 25(4), 555-589.
- Puller, Steven L., (2006), The strategic use of innovation to influence regulatory standards, *Journal of Environmental Economics and Management* 52, 690706.
- Reinganum, J., (1983), Innovation and the Persistence of Monopoly, *American Economic Review*, 73(4), 741-748.
- Sunaryo, T., (2001)., *Ekonomi Manajerial Aplikasi Teori Ekonomi Mikro*. Jakarta : Penerbit Erlangga.
- Scherer, F., (1967), Structure and the Employment of Scientists and Engineers, *American Economic Review*, 57, 524-531.
- Schumpeter, J., (1942), *Capitalism, Socialism, and Democracy*. New York : Harper.
- Spence, M., (1984), Reduction, Competition, and Industry Performance, *Econometrica*, 52(1), 101-122.
- Stewart MB., (1983), *Non-cooperative oligopoly and pre-emptive innovation without winner-take-all*. The Quar. J. Eco. 681-694.
- Tauman, Y., Weiss, Y., (1987), Labor Unions and the Adoption of New Technology, *Journal of Labor Economics* 5, 477-501.
- Ulph, A., Ulph, D., (1994), Labour Markets and Innovation. Ex-post bargaining, *European Economic Review* 38, 195-210.
- Vives, X., (2008), Innovation and Competitive Pressure, *Journal of Industrial Economics*, 56(3), 419-469.