MARKET STRUCTURE AND CONCENTRATION

- Ahmad Sobri Jaafar

Structure and Efficiency

Markets are the central nervous system of our free enterprise economy. We rely on them for most of our needs - food, shelter, entertainment, etc. They are mediums where buyers and sellers interact to exchange goods and services for money. Markets vary in their structure in many respects and the way firms behaved and prices are determined depend on market structure. According to the Structure-Conduct-Performance (SCP) approach, there exist causal relationships between the structure of a market, the conduct of firms in that market and their economic performance. Market structure are those attributes of the market that influence the nature and the degree of competition in the market. Those attributes include size and size distribution of firms, product differentiation and barriers and condition of entry. Conduct refers to the behaviours or actions of the firms in a market, e.g. how they set prices, whether independently or in collusion with others in the market, the degree of product differentiation, etc. Performance is the appraisal of how the economy satisfies specified goals such as efficiency, equity and growth, e.g. whether or not firm operations enhance economic welfare.

Economists delineate four basic market structures, namely, pure competition, monopolistic competition, oligopoly and monopoly. Pure competition consists of a large number of comparably equal sized sellers producing identical product in an environ-ment of full information. Firms operating in this market are called price takers because the prices of their products are determined by the market forces of supply and demand. No one seller is able to dictate prices or raises it above the market equilibrium. As a result, in perfectly competitive market, market mechanism leads to maximization of consumers' welfare through the attainment of allocative and product efficiency. Taken together, allocative efficiency and productive efficiency achieve what is called Pareto Optimality, a situation where no one can be made better off without making someone else worse off. However, in the real world, this ideal situation is very difficult to achieve because all the conditions for perfect competition are often not fulfilled. Nevertheless, the conclusions derived from the perfectly competitive model have proved useful in providing a basis or a yardstick by which we can gauge the behaviour and performance of real life markets.

Markets which does not satisfy the conditions for perfect competition in one respect or another are known as imperfectly competitive markets. These market structures are characterized by market power (i.e. the ability to influence market price), product differentiation and imperfect information. Firms in these markets possess a degree of market power and are able to raise price above the level of marginal cost. The three market structures under imperfect competitions are monopolistic competition, oligopoly and monopoly. Monopo-listic competition consists of many firms selling differentiated products. Oligopoly consists of a few firms whose products are typically substantially differentiated from each other. While monopoly consists of a single seller of a product that has no close substitute. In these imperfectly competitive markets, competition is ineffective and market power usually undermine efficiency, output produced is less than it should be for an efficient allocation of resources and wealth is shifted from consumers to owners of the firms.

Concentration

The best known and often used indicator of market structure is concentration. All things being equal, a market is said to be more concentrated the fewer the number of firms in production or the more unequal the distribution of market share. The more concentrated an industry the more it encourages monopolistic behaviour and its effects. The most commonly used measure of market concentration is the concentration ratio, e.g. the four-firm concentration ratio (CR4) or the eight-firm concentration ratio (CR8). A higher concentration ratio is associated with greater market power.

There have been several studies on market structure in Malaysia and quite recent ones were by Bank Negara Malaysia (BNM). Table 1 summarizes BNM study on the levels of concentration of selected manufacturing industries using CR4 between 1979 - 1990 (1992).

Table 1: Distribution of Industries by Levels of Concentration

Percent of Survey Gross Output Supplied by the Largest 4 firms	Number of Industries with Largest 4 firms in the specified interval		
	1979	1985	1990
70% to 100%	36	45	38
60% to <70%	18	11	14
50% to <60%	13	13	16
40% to <50%	15	21	27
30% to <40%	14	18	11
20% to <30%	9	7	9
10% to <20%	4	5	5
<10%	1	1	1
Subtotal	110	121	121
Number of Industries with less than 4 firms	11	7	7
Total number of industries	121	128	128

Source: Table II, p 233, Bank Negara Malaysia Annual Report 1992

Table 2: Distribution of Service Industries by Levels of Concentration

Percent of Gross Output Supplied by Largest n Firms	Number of Services Industries with Largest Four Firms in the specified interval		
	1975	1985	1992
70% to 100%	2	-	-
60% to <70%	-	-	2
50% to <60%	1	1	1
40% to <50%	-	1	3
30% to <40%	2	3	1
20% to <30%	7	5	6
10 to <20%	5	8	10
<10%	3	4	3
Total	20	22	26

Source: Table II, Box I, p 241, Bank Negara Malaysia Annual Report 1995

The findings of the study showed that the Malaysian manufacturing sector was highly concentrated and the level of concentration has somewhat increased between 1979-1990. By international standard an industry is considered oligopolistic if CR4 is at least 40% and competitive if CR4 is less than 20%. Based on this criterion, the study showed that Malaysian manufacturing sector was highly oligopolistic and non-competitive because only five out of 121 industries in 1979 and six out of 128 industries in 1990 their CR4's were less than 20%. Among the industries with high degree of concentration were textiles, metal products, tobacco, petroleum refineries, glass and glass products, refrigerating and air conditioning, electrical appliances, dry cell and storage batteries, aircraft and transport equipment, photographic and optical goods, watches and clocks and the manufacture and assembly of vehicles including motor vehicles and motor cycles. The industries with CR4 less than 20% were large rice mills, sawn mills, furniture and fixtures, rubber remilling and rubber latex processing. The study also revealed that among the factors found contributing to the high level of concentration were scale economics, capital intensity, advertising and foreign presence. One policy implication from the findings of this study is that, there is a need for a competition policy. Greater concentration can lead to greater economies of scale but also tend to encourage monopolistic practices, rising costs, poorer economic performance as a result of the reduction in competition.

Contrary to the manufacturing sector, the finding for the services sector showed that it was more competitive. The CR4 was below 20% for 8 of 20 services sub-sector in 1975 and 13 of 26 services sub-sector in 1992 (Table 2). Only six sub-sectors had CR4 over 40%, namely merchant banks, commercial bank, finance companies, shipping, stevedoring and real estates agents. (Bank Negara Malaysia 1995).

Related Studies

The SCP approach has spawned a wide variety of empirical work. Many studies have presented evidence on the market structure-performance relationship for the developed countries (Yusof and Phang 1993, Davies et. al 1991, Martin 1993). However, there were not many studies done on structure-performance relationship of industries in Malaysia.

A study by Gan and Tham (1977) on 42 industries found a significant positive relationship between price-cost margin and barriers to entry. A recent study by Rugayah (1992, cited in Yusof and Phang 1993) for the period of 1978-1986 on 31 industries also supported the structure-performance hypothesis. Her study showed that the price-cost margin was explained significantly by sellers concentration, capital requirement, product differentiation, capital intensity, exports and imports.

References

1. Bank Negara Malaysia (1992), Annual Report.
2. _____ (1995), Annual Report.
3. Davies, S., Lyon, B., Dixon, H., Geroski, P. (1991), Economics of Industrial Organization, Longman, London.
4. Martin,S. (1993), Advanced Industrial Economics, Blackwell, Cambridge, Mass.
5. W.B. Gan and S.Y. Tham (1977), "Market Structure and Price-Cost Margin in Malaysian Manufacturing Industries", Journal of Developing Economies, Vol. XV No 3: 280-92
6. Rugayah Mohamed (1992), "Market Structure, Ownership and Profitability of Firms", Working paper for Institute of Strategic and International Studies, Harvard Institute for International Development Workshop.
7. Schmalensee, R.M. (1989), "Inter-Industry Studies of Structure and Economic performance" in Richard Schmalensee and Robert Willig (eds.), Handbook of Industrial Organization, North Holland, Amsterdam: 951-1009
8. Yusof, Z.,A. and Phang, H.E.(1993) Industrial Market Structure in Malaysia 1979-1990: A Profile, Bank Negara Malaysia Discussion Papers No.21.