

The Structure Conduct Performance Model and Competing Hypothesis- A Review of Literature

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Abstract

Industrial Organization (IO) is concerned with the structure of industries in the economy and the behavior of firms and individuals in these industries. This theory has not only grown within its field, but also in others, such as business management especially in the areas of strategic management. The Structure Conduct Performance (SCP) paradigm appears to be the most pertinent and long time used approach to assess industry structure studies. It basically attempts to look at the market structure of industries and determine their conduct and performances. Various theories that challenged the SCP are also witnessed including the efficient hypothesis, contestable market theory and quiet life hypothesis etc. Even in recent period, a reverse approach to look at the structure and performance of a given industry by observing the conduct of firms has emerged. In other words, the new wave of research like New Empirical Industrial Organization (NEIO) set out to understand the institutional details of particular industries and use this knowledge to test specific hypotheses about specific firm behavior. Nevertheless, NEIO appears to be the alternate paradigm for imperfect market analysis than the one totally revoking the methodological approach of the SCP, in fact with friction between the two paradigms. Some authors like Bhuyan (2014) has compared these two methods of analyzing market power and concluded that the debate over the use of the SCP approach versus the use of the NEIO approach to analyze market power will continue. The debate however is not only among the aforesaid paradigms but still there is unresolved inconclusiveness among the structural theorists like SCP and efficient market theorists.

Keywords: Structure, conduct, performance, Industrial Organization

Introduction

The literature review begins with an outline on the definition and historical evolvement of the field of industrial organization up to its current state. In particular, a review on the shift in the field's emphasis over time from the endeavor to address measures across industries towards more individual industry related studies. The second part of the review highlights key ideas on the focus of the industrial organization. The detail model of the structure-conduct-performance paradigm is also reviewed in the subsequent section. This is followed by a review of the alternative structural and non-structural models of industry structure evaluation.

Industrial Organization- Defining the concept

Industrial Organization (IO) is known by several names in the literature such as 'Economics of Industries', 'Industry and Trade', 'Industrial Organization and Policy', 'Commerce' and 'Business Economics' etc. However, several authors (Stigler, 1968, Cabral, 2000) have used 'Industrial Organization' as an appropriate title of the subject. Despite the diversity of naming, there seems a consensus on the definition and scope of IO. On much broader sense, authors consider IO to have concern on three areas: the firm, markets and industries. For instance, the most illustrious definition of IO by Stigler contains all three elements. He defined industrial organization as '*the application of microeconomic theory to the analysis of firms, markets and industries*' (Stigler, 1968, p. 1).

Another definition with similar contextual meaning is from (Cabral, 2000) 'Industrial organization is concerned with the workings of markets and industries, and in particular the way firms compete with each other' (Cabral, , p.9). This definition provided more prominence to IO's focus on the competition among firms in the industry. A rather more specific definition of IO is also forwarded by Church and Ware (2000). They defined IO as 'the study of the operation and performance of imperfectly competitive markets and the behavior of firms in these markets' (Church and Ware, 2000, p.7). The definition interestingly defined the type of market the IO study basically provides greater attention i.e. imperfect competitive market. The existence of imperfect competition or the degree of existence of all the stated factors is a reflection of the differences in market power of firms in the industry. In such regard, Church and Ware (2000) provided an alternative and very specific definition to IO, i.e. 'it is the study of the creation, exercise, maintenance, and effects of market power' (Church and Ware, 2000, p.31).

The other dimension of IO definition is related to explaining the root of the field. Barthwal (2010) argues

that 'IO as a field developed from microeconomics and is concerned with economic aspects of firms and industries seeking to analyze their behavior and draw normative implications' (Barthwal, 2010, p. 15). He explained that there are differences between those two theories. Microeconomics is formal and deductive, whereas, Industrial economics is less formal and more inductive. Furthermore, microeconomics is a passive approach with the aim of profit maximization of a company, without concerning operational aspects of the company. Industrial economics' emphasis is on the operational aspect and tries to explain the working and changes in the existing system. His argument also get support from other authors like Ramsey (2001) who suggested that the focus of IO theory is on the market a company operates in, rather than the company itself . Ramsey (2001) supports the market focus of IO being reflected in the structure-conduct-performance model, which claims that there is a causal link between the structure of a market in which a company operates, the organization's conduct and in turn the organization's performance in terms of profitability. Thus, the industrial organization theory focuses on the whole industry and market conditions of a company.

Shepherd (1972) further explained the difference as microeconomics typically focuses on the extreme cases of monopoly and perfect competition while industrial organization focuses primarily on the case of oligopoly. That is to mean, a competition between few firms in an industry whose number is more than one unlike in monopoly, but not as many as in competitive markets.

Some authors also provided a strategy or conduct focused definition of IO. For instance, Salinger (2000) explained IO as the field that tries to understand the behavior of companies and what that behavior means for the well-being of consumers. This appears to be the area where the overlap between strategy management and economics was apparent. For instance Porter (1981) has used the SCP model to design its industry analysis model. He claimed that the central analytical aspect of IO can be used to identify strategic choices which firms have in their respective industry. More specifically, IO has offered strategic management a systematic model for assessing competition with in an industry (Porter, 1981). Church and Ware (2005) support the close association of the two fields of the study. The focus of the new industrial organization on the behavior /conduct of firms in imperfectly competitive industries involves determining the firms' strategies to win a competitive advantage in the market. Therefore, IO that has a bearing on industry and firm level study appears as a theory of business strategy.

History of Industrial Organization

Literature shows that it is difficult to identify the exact beginnings of IO because of limited historical records on the field (Hampfrey, 1940). There appear, however, some evidences according to which monopolistic practices and other elements of the industrial economics were in operation as far back as 2100 BC (Trucker, 2010) However, written records revealed that the foundation of economic theory was the book of Adam Smith in 1776 named '*Wealth of Nations*'. In his economic theory, Smith (1776) discussed the principles of division of labor and analysis of pricing which were described by some authors like (Barthwal, 2010)) to represent the concept of IO.

Corley (1990) in his article, '*Emergence of the Theory of Industrial Organization, 1890-1990*', classified the history of IO into eras and referred to Marshal as pioneer to present ideas about IO. The eras incorporate: Alfred Marshall Era, Cournot Legacy (1890-1933), Era of Controversy (1933-1951), The Emergence of Industrial Organization Studies (1950s) and developments after 1960 onwards. Corley associated Marshal to the theory of IO due to his focus on competition and being a pioneer to integrate the concept of entrepreneur into analysis of firm value. '*Marshal's basic ideas on the firm centered around competition which he saw in terms of an activity or a process rather than in modern structural terms*' (Corley, 1990, p.88).

Following Marshal (1889), Cournot formulated an economic model used to describe an industry structure in which companies compete on the amount of output they will produce (Hal, 2006). He began with the monopolistic case and progressively extended the number of producers in the market until he reached the opposite pole of unlimited competition. At this pole, each firm contributed too small a proportion of the whole to affect the going industry price. Cournot discussed duopoly, suggesting that self-interest would induce the two rivals concerned to reach a determinate and mutually advantageous solution. However, he failed to analyze the commonest market form in advanced economies, namely oligopoly (Corley, 1990). This makes it the model to diverge from the current attention area of the IO and the facts in the real world which is the imperfect market and mainly of the oligopoly.

The developments up to 1933 were the gradual realization of the existence of an entirely new academic subject, the theory of the firm. Coase (1937) set out his transaction cost theory of the firm which is one of the first attempts to define the firm theoretically in relation to the market. His work is followed by a number of economic theories that explain and predict the nature of the firm and including its existence, behavior, structure, and relationship to the market (Demetri, 2007). Therefore, the period has diverted attention of earlier economists' work on corporate topics to clarify aspects of value theory. Corley (1990) named this period as '*an interlude before the pace of constructive work accelerated in the 1950s*'.

The Modern Theory of Industrial Organization

By the end of the 1930s, the field of IO started to come together and take shape (Schmalensee, 2012). Partly this was due to the influence of Edward Mason at Harvard (Mason 1939, 1957) and partly due to the industrial data collection and analyses practice. Schmalensee (2012) considers that in the modern era, IO economists have played an important role in industry studies in support of broad assertions regarding market conduct and performance. The modern era can also be further classified into three groups based on the dominating school of thought (Kovacic and Shapiro, 2000).

Harvard School

After the 1930s, scholars from the Harvard school began to focus on the structure of both firms and industry (Schmalensee, 2012). A notable influence from this school was from Mason (1939) who pointed out that the size of a firm has an impact on its competitive policies in the market. Mason (1939, p.73) explained that:

“The relative size of a selling unit, to recapitulate is one element-doubtless a very important one-in the structure of a firm’s market. As such it exerts an influence on the policies and practices of the firm. But firms of given size, relative to the extent of their markets, will follow very different price and production policies in different market situations.”

Another significant influence is from the school has been from Bain (1951) who has assembled a sample of census industries and linked them to profitability data. He has found that industries in his sample with four-firm concentration ratios above 70 percent had distinctly high accounting profit rates than did the others (Bain, 1951)

Bain (1956) has improved such concept further in his book, ‘Industrial Organization’. He laid out the Structure - Conduct - Performance (SCP) which is used as an analytical framework to make relations among market structure, conduct and performance. Bain (1956) established that the market structure of an industry determines its conduct and thereby impacting firm performances. The SCP paradigm, with some further economics based supplements, became the basis for much of the modern version of ‘Merger Guidelines’ (White, 2006).

As implications of all this, Harvard School, recognizes market power as being a factor to be controlled and establishes a relation between the concentration ratio and its harmful effects on social welfare (Weiss, 1971). The 1960s and early 1970s saw further elaborations of the SCP paradigm and more extensive testing of the profitability-concentration relationship with the inclusion of entry conditions (Mann, 1966; Weiss, 1971), advertising (Comanor and Wilson, 1967, 1974), foreign trade (Esposito F. and Esposito L., 1971), the structural conditions on the buyers' side of the market (Lustgarten, 1975), risk (Bothwell and Keeler, 1975), and the presence of a critical concentration ratio (White, 1976). The concept of efficiency has also started to grow from this school. Harbison (1956) drew on the concept of entrepreneur and suggested that so called inefficiency could be due to entrepreneurs behaving rationally in pursuing other goals than profit maximization such as social advancement. Furthermore, he remarked that efficiency could also be reduced by inadequate knowledge and inappropriate organizational structure which could lead to loss of effective control over subordinates. These important ideas were further developed later (Leibenstein, 1966). He stated that ‘...the amount to be gained by increasing allocative efficiency is trivial while the amount to be gained by increasing X-efficiency is frequently significant.’ (Leibenstein, 1966, P. 45)

Chicago School

The Chicago School counter upheaval focused on SCP, which argued that high concentration might be causing high profit rates, because of economies of scale (Goldschmid, 1974). A further attack to the profit-concentration relationship also aroused on the use and reliability of the accounting data that were used to measure the profit rates (Anthony, 1986; Salmon, 1985). In addition, there were critics on whether relative profit rates were even the appropriate indicators of market power (Fisher and McGowan, 1983). Profit-based tests of the SCP paradigm quickly tailed off, but were soon replaced by price-based studies drawn from individual industries (Weiss, 1989; Bresnahan and Schmalensee, 1987). Results, however, tended to show a similar positive relationship between prices and market concentration. There was a general consensus among this school’s scholars that the relationship between market structure and performance is a reflection of the efficiency of big firms which allowed them to be prominent from the market (Simrlock, 1985). In other front, Demsetz (1974) argued that the pragmatic relationship between profitability and concentration could be due to the large market shares of firms in highly concentrated industries. Therefore, the emphasis of the school seems changed in regard to price and efficiency theory.

Game Theory

Game theory appears as a separate topic of strategic decision making after the publication of the ‘Theory of Games and Economic Behavior’ by Von Neumann and Morgenstern (1944). In 1950, John Nash demonstrated

that finite games always have an equilibrium point at which all players choose actions which are best for them given their opponents' choices. Game theory received special attention in 1994 with the awarding of the Nobel Prize in economics to Nash, John Harsanyi, and Reinhard Selten. In general, the theory has provided emphasis on strategic decision making of the firm applying mathematical models using Nash equilibrium (Corley, 1990). The theory has supported some of the topics in industrial organization. These include entry deterrence; limit pricing and predation; theory of collusion in markets with public demand theory of sales and price wars (Bagwell and Wolinsky, 2000).

The New Industrial Organization

According to Tirole (1988), modern research in IO is challenged by: lack of convincing theoretical models to study imperfect competitive market situations and lack of quality data that limited empirical work about competition or industry structure. The focus of the empirical research related to industry structure mainly relies on cross industry analyses that established a link between industry concentration scenarios across industries with market outcomes (Bresnahan and Schmalensee, 1987). Nevertheless, the aforesaid challenges later has set stage for a dramatic shift in the 1980s toward a specific industry based analysis and firm behavior. This period as coined by Bresnahan (1989) is called the '*New Empirical Industrial Organization*' era. The basic premise of the approach was the idea that cross industry variation was often going to be problematic. Therefore, the new research path should follow the institutional details of particular industries and about specific behavior of firms. Bresnahan and Schmalensee (1987, p. 21) named the move as '*...a shift toward the firm, rather than the industry as the unit of observation.*

Studies frequently focus on a single industry or market, with careful attention paid to the institutional specifics, measurement of key variables and econometric identification issues (Weiss, 1992). The focus on individual industries offers the best opportunity to understand the competitive mechanisms at work (Bresnahan, 1989). Unlike the empirical literature on SCP, which was primarily based on cross-section studies, the New Empirical Industrial Organization (NEIO) focuses on econometric testing of particular aspects of conduct in single industries with the objective of detecting market power or changes in the collusive-competition behavior of firms (Weiss, 1971). Weiss (1971, p.398) opined that '*perhaps the right next step is back to the industry study, but this time with regression in hand*'. The approach entails the construction of explicit structural models that provide theoretical analysis of how firms in the industry would behave under different market structures (Comanor, 1971).

Even though the NEIO has named as the new IO, the existing literature on market power shows that there is no unanimous agreement on which of these two methods should be used to analyze the market power (Bhuyan, 2014). For instance, much of the literature on developing countries' experiences continues to be based on the SCP paradigm and even in developed countries the number of NEIO studies is far less than the number of SCP-based studies that have been carried out thus far (Lee, 2007). In addition, the empirical debate between the Chicago and Harvard schools is still hot and is reflected in research works of both developed and developing countries (Kapunda and Molosiwa, 2012). Most importantly, literature has not yet resolved a critical question of what determines industry competitiveness considering both firm strategies and market structure and this remained the important center area of IO. Therefore, NEIO appears to be the alternate paradigm for imperfect market analysis than the one totally revoking the methodological approach of the SCP, in fact, with friction between the two paradigms (Bhuyan, 2014). Bhuyan (2014) has compared these two methods of analyzing market power and concluded that the debate over the use of the SCP versus the use of the NEIO approaches to analyze market power will continue.

Focus areas of Industrial Organization

Shepherd (1972) more specifically considered the focus of industrial organization to assess the astonishing phenomenon between the two extreme market conditions i.e. competition and monopoly. He elaborated the concept through methodological approaches as well.

"Industrial Organization (IO) like most scientific fields has a double identity. On the one side it appears an abstract subject with full set of analytical concepts about the market. On the other hand, the topic is about real markets, teeming with the excitement and drama of struggles among real firms. The field applies the concepts to the reality providing meaningful insight through explaining effects and providing measurement and testing procedures." (Shepherd, 1985, p 2).

IO is, therefore, concerned about both markets and firms where the applicability and explanatory power of the theory of perfect competition is questionable. Therefore, IO analyzes empirical data on imperfect competition through empirical data assessment and explains the behavior and performance of both firms and the industries to which they belong (Caves, 2007). This suggests that the center of attention of the field relies from the perspective of the firm as a separate entity as well as the market in which the firm operates on. Lipczynski, Wilson and Goddard (2013, p. 6), demarcated the focus area of IO as:

“...investigate the size structure of firms (one or many, ‘concentrated’ or not), the cause (above all economies of scale) of this size structure, the effects of concentration on competition, the effects of competition on prices, investment and innovation and so on.”

Therefore, the main theme in IO includes structural analysis of the industry (including oligopoly, concentration, barriers to entry, performance, market structure etc). On the other front, it incorporates analysis on the theory of the firm (including analysis of firm strategy, pricing, product differentiation, advertising, auctions, research and development to mention a few (Lipczynski, Wilson and Goddard, 2013).

As the main objective of this thesis lies on the market (industry) structure analysis, the subsequent review will delve into market structure and related aspect of the industrial organization.

The Structure-Conduct-Performances (SCP) Hypothesis

Mason (1937) and Bain (1956) formulated a framework for empirical analysis of the effect of market structure on industry performance called the Structure-Conduct-Performance (SCP) model. The central hypothesis of the framework is that observable structural characteristics of a market determine the behavior of firms within that market, and the behavior of firms within a market determines measurable market performance (Bain, 1951). In short, SCP paradigm assumes that market structure would determine firm conduct which would determine performance (Bain, 1956). This is a paradigm that is foundational to industrial organization economics (Barney, 2007). Since its conception, it has been used to analyze markets and industries, not only in Economics, but also in the fields of business management. For instance, the mainline of Michael E. Porter’s works on competition (Porter’s diamond model) are based on premises derived from this paradigm (Porter, 1981). Lipczynski, Wilson and Goddard (2013, p.6) stated the importance of the SCP paradigm in several ways:

- It allows the researcher to reduce all industry data into meaningful categories ;
- It is consistent with the neoclassical theory of the firm, which also assumes there is a direct link between market structure, and firm conduct and performance, without overly recognizing this link;
- by defining a workable or acceptable standard of performance, it may be possible to accept an imperfect market structure, if such a structure produces outcomes that are consistent with the acceptable standard. By implication, market structure can be altered in order to improve conduct and performance.

Assumptions of the SCP Framework

The SCP framework posits a stable relationship and a line of causality that runs from structure through conduct to performance (Church and Ware, 2000). Consequently, the original SCP paradigm assumes a one-way relationship between structure, conduct and performance. This is the assumption that market structure determines market conduct and thereby affecting market performance (Roth, 2005).

The SCP paradigm asserts that conditions of supply and demand in an industry determine its structure. The competitive conditions that result from this industry structure influence the behavior of companies and in turn dictate the performance of the industry (Smit and Trigeorgis, 2004). Therefore, the model assumes that market structures identified by many firms providing the same products and services, though relatively equal in firm size, are competitive markets generating greater performance (Carlton and Perloff, 2000). Then, the degree of concentration of firms’ output in a market affects the extent of competition among these firms in the industry. This is so because of the assumption that a more highly concentrated market structure is more likely to produce more effective collusion (Sathye, 2005). In other words, SCP model suggests that market concentration lowers the cost of collusion between firms and ends in suboptimal profits for all market participants (Bain, 1951).

The paradigm further assumes that equilibrium states and perfect information are found in practice (Ferguson.G and Ferguson.P, 1994). As McWilliams and Smart (1995, p. 309) suggested ‘*the original SCP-paradigm is based on the assumptions that demand is known and constant and that competition is a state*’. The underlying assumptions of the SCP approach, for example, that firms attempt to maximize profits, that firms have perfect information and that tastes are constant, lead to the conclusion that perfect competition is the ideal market structure (Roth, 2004). The market structure of perfect competition requires five necessary assumptions that include the following: firms sell a homogeneous product; there are a large number of small firms; firms are price takers; there are no barriers to entry and exit in the long run and firms and consumers have perfect information (Beaulier and Mounts, 2008). Obviously, these characteristics are unrealistic for most industries including banking.

The degree of concentration in a market has been considered as one of major structural characteristics in the traditional SCP-paradigm which predicts the level of competition (Meschi, 1997). The SCP assumes that market concentration and level of competition are inversely related as industry concentration encourages collusion (Edwards et al., 2006). Methodologically, such relationship is witnessed when industry concentration and performance are positively related (Allen et al., 2005). In such situations, firms operating in highly concentrated industries will have a higher return than firms operating in less concentrated industries regardless of their efficiency level. Similarly, such scenario will put industry concentration to inversely relate to the welfare of the

consumer as well as the number of firms in the industry (Shepherd, 1985). In addition, the price of the firm gets closer to marginal cost if concentration falls which leads to fall in market power as well (Nguyen and Stewart, 2013).

The other assumption of the SCP is that the firm conduct is determined by the structure of the industry, hence; there will be a main linkages running from structure through conduct to performance (Bain, 1956). However, later critics have pointed that various feedback effects are also possible, i.e. from performance back to conduct; from conduct to structure and from performance to structure (Phillips, 1976; Clarke, 1985).

Components of the Structure-Conduct-Performance (SCP) Framework

As outlined above, the SCP framework is mainly a composition of three core components: market structure, conduct and performance. Nevertheless, these elements are later expanded to incorporate public policy/regulation, demand and supply situations etc.

a. Market Structure

Conceptually, a market structure is a classification system for the key traits of a market, including the number of firms, the similarity of the products they sell, and the ease of entry into and exit from the market (Trucker, 2010). It mainly comprise the market share of its firms, and to a lesser extent, any barriers against new competitors (Bain, 1956). Each market structure is somewhere in the range between monopoly (a high market share and entry barrier) and pure competition (low share and barriers) (Shepherd, 1985). Salvatore (1998) identifies four different types of market organizations i.e. (a) perfect competition at one extreme, (b) monopoly at the opposite extreme, (c) monopolistic competition and (d) oligopoly in between. In addition, Shepherd (1985) included the concept of the dominant firm as a firm having 50-100% of the market and no close rival. He further classified oligopoly into two, i.e. tight oligopoly (the leading four firms combined share 60-100% of the market) and loose oligopoly (the leading four firms have 40% or less of the market). Competitive power is one of the basic criteria to distinguish various forms of market. However, it can be maintained that the actual market power depends on the competition or monopoly power. The tilt of this power determines the benefits either to the buyer or to the seller. The concept of a market structure is, therefore, understood as those characteristics of a market that influence the behavior and results of the firms working in that market (Hay and Morris, 1991). The interaction and differences between these behaviors and results allow for the existence of several market structures. Therefore, competition or market power is stated as the reason for the existence of different types of market structure. Thus, how such variation in market structure affects the performance of firms appeared to be the most important question that needs to be addressed in such regard (Mason, 1937). As explained above the main theme of the SCP paradigm appear to investigate the validity and existence of such kind of cause-effect relationships.

In the SCP-paradigm, structure describes the characteristics and composition of markets and industries in an economy (Ferguson, 1994). Structure, therefore, incorporates those set of variables that are relatively stable over time and affect the behavior of sellers and/or buyers. Structure is given a broad meaning covering assortment of different characteristics relation both to individual firms and relationships between firms (Needham, 1970). This distinguished approach of definition depends on whether structure is viewed internal or external to the individual industry (Devine, 1976). On the one hand, structure refers to the relative importance of individual industries (or groups of related industries) within the economy and to patterns of transactions between these industries. On the other, structure is a concept derived from the received theory of the firm which analyses business behavior according to the structure of the market in which it operates. Therefore, structure refers to the level of seller and buyer concentration, the height of entry barriers and the degree of product differentiation within individual industry markets (Shepherd, 1985).

Literature considers the main elements that influence market structure to include such factors as seller concentration, product differentiation, barriers to entry and barriers to exit, buyer concentration and the growth rate of market demand (Lipczynski, Wilson and Goddard, 2013). Other elements of market structure exist, but they are usually unstable and, therefore, ignored either because they can't be measured or because they are hard to observe (Belleflamme, Martin and Peitz, 2010). These factors; therefore, determine the extent of the market and the competition level. According to Bain (1968), seller and buyer concentrations, firm's size and entry conditions are the basic elements of market structure. These elements in one way or the other influence market integration. Seller concentration or buyer concentration inhibits the free flow of goods and services among markets. This in turn distorts the spirit of a unified or integrated market.

The higher the concentration is, the closer the market would be towards a monopoly structure (Bain, 1968). Mohamed (2013) describes a market as concentrated if there are few number of firms in the production or there is an unequal distribution of the market shares. The more the concentration level of the industry, the higher would be the degree of monopoly and competition loss (Weiss, 1974). Low concentration of an industry indicates less market power held by the leading firms which empower them to consistently charge price above those that would be established by competitive market (VanHoose, 2009). Therefore, the industrial organization studies claim that market power in the hand of single producer or fewer numbers of producers, enable a firm to

set price above the marginal cost.

The degree of product differentiation is another important factor since it can refer to an imperfection in the substitutability (to buyers) of the output of competing sellers in an industry (Lipczynski, et al; 2013). Differentiation is important variable affecting market structure since it could strengthen the firm's market position and profit. Moreover, product differentiation can act as an entry barrier (Church and Ware, 2000). This is due to fact that in case of strong brand loyalty, the new entrant might be required to pay the price of convincing consumers to buy his/her product by offering better terms e.g. quality or price or greater advertising (Church and Ware, 2000).

Similarly, if the entry condition is restricted, the biggest firm may control the entire market and this leads to weak performance by other firms (Bain, 1968). These barriers have an effect on conduct as well as on firm performance because entry barriers place influence on the price setting mechanisms of established firms. In other words, the higher the entry barriers, the higher the limit to set prices (Carlton and Perloff, 2000). On the flipside, if there are no entry barriers, existing firms in the industry cannot maintain prices above marginal costs and earn above normal profits. Any profits associated with non-competitive pricing would then invite entry which would continue until all profits are competed away (Church and Ware, 2000). Moreover, entry barriers are required in order to exercise market power (Tung et al; 2010). Therefore, entry barriers are one of the determining factors for market concentration.

In sum, market structure is characterized by several factors that determine the level of competition and market power. In other words, the structural elements seem to influence strategically the nature of competition and pricing within the market. Therefore, the firm's conduct should fit the characteristics of the market (Weiss, 1978). This will directly affect the performance of firms in the industry. Therefore, studying market structure enables to derive the conduct of firms in the industry. Other scholars also shared the same view, for instance, George and Singh (1970) and Dahl and Hamxond (1977).

b. Conduct

In the opinion of Bain (1968), market conduct refers to the pattern of behavior followed by firms in adopting or adjusting to the markets in which they sell or buy. It is the way in which buyers and sellers behave both amongst themselves and amongst each other (Wang, 2010). This happened because firms choose their own strategic behavior, investment in research, in development, advertising levels, collusions, etc. According to Moore (1973), market conduct comprises several methods practiced by traders to attract the customers to the business. It includes several price competition methods and non-price inducements. Purcell (1973) defined market conduct to refer to the actions and behavior of firms within the given structure. Pricing policies, selling cost, non-price competition are all some of the activities of market conduct. Therefore, market conduct resembles the behavioral pattern of firms in an industry. It comprises of various decision making techniques in determining price, output, sales promotion policies and other tactics to achieve their economic goals (Grigorova et al., 2008). Thus, given the structure of the market, market conduct determines firm performance. Conduct in the SCP paradigm is assumed to be directly influenced by the market structure (Bain, 1956).

As conduct involves the behavior (actions) of the firms in a market, the behavior of the firm is, therefore, determined by the structural characteristics of the industry (Mohamed, 2013). Scherer and Ross (1990) suggest that conduct in the SCP paradigm is related to the firms' product strategies, innovation and advertising. It focuses on how firms set prices, whether independently or in collusion with other firms in the market and on how firms decide on their advertising and research budgets and how much expenditure is devoted to these activities (Ferguson, 1994). Conduct also takes into consideration the pricing strategies and product strategies of the firms within an industry, research and development, mergers, legal strategies, etc. and a product strategy where each firm is constantly attempting to develop new brands (Grigorova, 2008). These aspects of conduct are influenced by the structure of the market since the firm's activities are based on the environment it is in to be successful (Mohamed, 2013). Lipczynski, Wilson and Goddard (2013) provide some list of elements of business conduct that are influenced by the structure of the market that include: business objectives, pricing policies, product design, branding, advertising and marketing, research and development as well as collusion and merger. They also provide further explanation on the elements of conduct that include the following:

- The objective that firms pursue often is derived from structural characteristics of the industry, in particular the firm size distribution.
- The extent of a firm's discretion to determine its own price depends to a large extent on the industry's structural characteristics.
- Natural or inherent characteristics of the firm's basic product are likely to influence the scope for non-price competition centered on product design, branding, advertising and marketing.
- Together with advertising and marketing, investment in research and development provides an outlet for non-price competition between rival firms. The extent and effectiveness of research and development investment, and the pace of diffusion are critical determinants of the pace of technological progress
- Collusion is another option open to firms wishing to avoid direct forms of price or non-price competition.

Therefore, collective decisions concerning prices, output levels, advertising or research and development budgets will be reached. Collusion may be either explicit (through an arrangement such as a cartel), or implicit or tacit (through a less formal agreement or understanding).

- Horizontal mergers (between firms producing the same or similar products) have direct implications for seller concentration in the industry concerned. Vertical mergers (between firms at successive stages of a production process) affect the degree of vertical integration. Conglomerate mergers (between firms producing different products) affect the degree of diversification. Therefore, each type of merger decision provides an example of a conduct variable that has a feedback affect on market or industry structure.

On the other hand, there is a strong view that firm's conduct is able to influence the market structure. For instance, firms' conduct is able to change market structure through merger process. Different mergers, horizontal, vertical, or conglomerate, are of different influence on the structure of market. This is because mergers between firms could increase market power, by increasing the market share or the entry barriers in an industry (Shepherd and Wilcox, 1979). Shepherd and Wilcox (1979) argue that when a horizontal merger takes place, market concentration increases, competition reduces and the merging firms increase their market power over prices. Concluding from this, one could say that together with structure, conduct defines performance. Hence, firm's conduct is also capable of changing the market structure.

c. Performance

In the view of Bain (1968), market performance deals with the economic results that flow from the system in terms of its pricing efficiency and flexibility to adapt to changing situation etc. It represents the economic results of the structure and conduct. According to Narver and Savitt (1971), performance was the net result of the conduct and was measured in terms of net profits, rate of return on owner's equity, efficiency with which plant, equipment and other resources were used and so on. Market performance is related to market structural conditions and firms' conduct with regard to pricing and product policies and profitability (Bain, 1956), productive and allocative efficiency (Neuberger, 1997), Growth (Lipczynski et.al; 2013) are regarded as important performance indicators. In terms of measurement, performance is measured by comparing the results of firms along the industry in relation to price, quantity, product quality, resource allocation, production efficiency, etc. (Neuberger, 1997). This is usually applying the accounting measures such as RoA, RoE, NIM etc. which in fact is subjected to several criticisms. On the other front, market performance resembles price level, profit margin, level of investment, reinvestment of profit etc (Hay and Morris, 1991). In other words, through the level of prices, the level of profit margin etc., one can determine the degree of market integration which has a bearing on both the structure and conduct of firms. Therefore, the economic result of market structure and market conduct represents market performance. From the above observations, it can be maintained that market performance is the combined result of market structure and market conduct.

d. Regulation

Neubrger(1997) has re-modified Bain's SCP framework by incorporating important variable in industry structure study and public policy. His argument relies on the fact that government policy can operate on almost all of the SCP variables: structure, conduct and performance variables. According to the SCP paradigm, if an industry comprises only a few large firms, the abuse of market power is likely to lead to the level of output being restricted and prices being raised above the equilibrium level (Lipczynski et.al, 2013). The stifling of competition is likely to have damaging implications for consumer welfare (Shafer, 2004). This suggests that there is a role for government or regulatory intervention to promote competition and prevent abuses of market power (Neubrger,1997). Lipczynski et.al, (2013) suggested that regulation involvement includes direct measures on market or industry structure. They pointed that competition might be promoted by preventing a horizontal merger involving two large firms from taking place or by requiring the break-up of a large incumbent producer into two or more smaller firms. Moreover, involvement might be targeted directly at influencing conduct through restricting a firm with market power from setting a profit-maximizing monopoly price. In addition, a wide range of government policy measures (fiscal policy, employment policy, environmental policy, macroeconomic policy and so on) may have implications on firms' performance, measured using indicators such as profitability, growth, productive or allocative efficiency.

Competing Hypotheses

There have been two ways of classification on the approaches and methods to assess the level of competition, namely, tests on structural and nonstructural characteristics (Bikker,2004). The structural methods focus on characteristics such as the level of concentration in the industry, the number of banks, market share, etc. (Bain, 1951). Structural theories consist of the SCP framework and the Efficiency Hypothesis (ESH) (Bikker and Haaf, 2001) and other variants like the quiet life hypothesis (Hicks, 1935) and contestable theory of the firm (Baumol, 1988). As revealed in the previous section, a useful organizing framework to think about competition and market power is provided by the structure conduct performance paradigm. This part of the literature considers other structural and non-structural competing hypotheses.

Efficient Structure Hypothesis

The Efficient Structure Hypothesis (ESH) underscores that market concentration emerges from competition where firms with low cost structure increase profits by reducing prices and expanding market share (Simrlock, 1985). This remains to be a competing as well as alternative rationalization for the link between industry concentration and performance. As proposed by Demsetz (1973) and others (Peltzman, 1977; Gale and Branch, 1982) higher performance of firms is the result of better efficiency. The hypothesis, therefore, the assumed positive relationship between industry concentration-performance is much a result of gains made in market share by firms with superior efficiencies. The final result, then, will be an increase market concentration whose main source belongs to better efficiency. Hence, better profits are not because of collusive activities as the traditional SCP paradigm would suggest (Molyneux and Forbes, 1995). Therefore, firms with superior management or production technologies have lower costs of operation that apparently translated to higher profits.

The ES hypothesis predicts that under the pressure of market competition, efficient firms win the competition and grow, so that they become larger, obtain greater market share and earn higher profits. As a result, the market becomes more concentrated (Sathye, 2005). The firms, therefore, have two options to maximize their profit level: they either maintain their price and reduce firm size or by lowering price and expanding the firm size (Williams et al., 1994). Consequently, higher profits are generated by large firms as a result of their superior efficiency. The main conclusion in these regard is the extra profits generated can be considered as an economic return and not as a return on monopoly (Chortareas et al., 2009; Seelanatha, 2010).

Mathematically as well, the ES hypothesis posits that the positive correlation between performance and concentration is spurious and a positive relationship between market share (MS) and performance should be interpreted as the consequence of efficiency (Simrlock, 1985). Philips (1976) further explained that market concentration and higher profitability may be the result of superior capabilities and economic efficiencies of firms in highly concentrated markets. A very vivid explanation of the theory of ESH is provided by Gale and Branch (1982, p.83) who stated that:

...market share, not concentration, is the primary structural determinant of profitability. Market share increases profits through the benefits of scale economies. In contrast, concentration affects profits by facilitating oligopolistic coordination. ...scale economies are far more powerful than oligopoly power in determining profit levels.... Provisions of our antitrust laws based on presumption that concentrated market structures lead to resource misallocation (...) are misguided and may well be leading to decreased efficiency.

The hypothesis has enjoyed significant support in the banking literature (Gilbert, 1984; Berger and Hannan, 1989, 1997; Berger, 1995). Among others, Smirlock (1985) and Molyneux and Forbes (1995) showed that there is a spurious relationship between concentration and profitability but between profitability and the proxy for the firm's efficiency measure (market share). Other studies also diverted attention towards considering the effects of efficiency on structure-performance relationship through explicitly estimating components of efficiency (Berger and Hannan, 1993; Maudos, 1998; Mendes and Rebelo, 2003; Sathye, 2005; Papadoplous, 2004; Katib, 2004; Fu and Heffernan, 2009; Chortareas et al., 2009; Seelanatha, 2010 etc.). The test of the ES hypothesis has been usually proposed in two different forms, depending on the type of efficiency considered. In the X-efficiency form, more efficient firms have lower costs, higher profits and larger market share, because they have a superior ability in minimizing costs to produce any given outputs. In the scale efficiency form, the same relationship described above is due to the fact that more scale efficient firms produce closer to the minimum average cost point (Berger and Hannan, 1993). Despite the controversies with the SCP hypothesis, the ES hypothesis has been tested in empirical studies in the context of a test of the SCP hypothesis (Weiss, 1974 and Smirlock, 1985). Therefore, ESH can be considered as an alternative interpretation to the SCP paradigm than a standalone model to totally disregard the SCP hypothesis. However, the debate among concentration and efficiency theories has not yet been satisfactorily resolved (Goddard et al., 2007).

As discussed above, the interpretation and implications of the two approaches seem flip sides of one another. The efficient hypothesis claims that industry concentration lowers competition, therefore, competition and efficiency remain inversely related. In other words, unlike the SCP paradigm, this approach has reversed the causality running from efficiency to competition. In contrast, the SCP establishes that a low degree of competition from high industry concentration results in market inefficiency. The view apparently is unlike that efficient theory that posits that a market becomes more efficient as it becomes more concentrated so that anti-concentration measures are unnecessary distortion in the economy (Goddard, 2001).

Quiet Life Hypothesis

As an extension of the structural theorists, both SCP and efficient hypothesis, Hicks (1935) came up to establish a relationship between industry concentration and level of efficiency. The basic premise of the quiet life hypothesis lies on that a banking monopoly restricts the managers' initiatives to ensure efficiency. Hence, they prefer a quiet life situation free from competition. Therefore, firms operating in an increased concentration not only limit competition but also operate under reduced efficiency level. Therefore, the main focus of the

hypothesis is on the effect of market power on efficiency. The view appears similar to the SCP but contrast with the efficiency theory as it presumed that competition is a driver of efficiency. Hicks (1935 p.8) explained the quiet life hypothesis as:

“...the subjective costs involved in securing a close adaptation to the most profitable output may well outweigh the meager gains offered. It seems not all unlikely that people in monopolistic positions will very often be people with sharply rising subjective costs; if this is so, they are likely to exploit their advantage much more by not mothering to get very near the position of maximum profit, than by straining themselves to get very close to it, The best of all monopoly profit is a quiet life.”

In a concentrated market, firms do not minimize costs because of inadequate managerial endeavor, absence of profit maximizing conduct, lavish expenditures to obtain and maintain monopoly power and/or survival of inefficient managers (Berger and Hannan,1998). Under monopoly or high market power, firms and their managers prefer a quiet life which mathematically is observed under a negative correlation between market power and managerial efficiency. Berger and Hannan (1998, p.454-455) provide several justifications for the relationship between higher levels of market power and lower efficiency levels:

- Firms' discretion to levy high prices beyond the competitive levels discourages managers not to put the expected effort to control their costs. They prefer a quiet life that permits owners to earn price derived economic rents rather than the earning from effective cost control,
- Market power also results in managerial leisure that allows them to pursue objectives other than profit maximization. Such situation enforces managers to choose expense preference behavior or low risk taking behavior;
- Lack of competitive environment also creates a slack in resources that will wastefully be invested to obtain market power. This action obviously reduces the cost efficiency but profits may be higher as a result of acquired or purchased market power that raises the economic rent.
- Market power also incubates inefficient managers and allows them to persist in the system even without any intention to pursue goals other than maximizing firm value. Thus, ineffective managers whose main focus will be to protect market power resiliently operate in the system even they appear inefficient.

In fact, there are some views which contrast the justifications of the quiet life hypothesis specifically in the context of the banking system. In such regard, Petersen and Rajan (1995) proposed a counter argument to the quiet life hypothesis due to the fact that:

- banks with market power are associated with lower costs of borrowing and transaction monitoring. This advantage improves the efficiency of large banks and leads to a positive relationship between market power and cost efficiency.
- market power also allows banks to enjoy greater profits which may create incentives to behave prudently. This behavior leads to the selection of less risky activities with lower monitoring costs.
- banks with market power are under less pressure to increase the quality of banking services, consequently, decreasing the operating costs.

The above argument contrasts the justifications of Berger and Hannan (1998) who found that quiet life effects in banking remained several times more substantial than the social losses from the mispricing of products arising from market power. However, both explanations assume that the traditional SCP paradigm holds, at least partially. It should, however, need to be noted that the Quiet Life Hypothesis is not a necessary part of the market power paradigm, but is often included in it (Shepherd, 1979).

Contestable Market Theory

The theory of contestable markets which was first introduced by Baumol, Panzar and Willig (1982) in their book, *'Contestable Markets and the Theory of Industry Structure'* stated that the threat of entry can persuade firms in an industry to moderate their pricing behavior. Such scenario is observed irrespective of the number of firms in the industry. Free entry and exit (from industry without cost) are the cornerstone of the contestable market theory. Therefore, as long as the market is free to enter and exit without cost, it can effectively hinder market monopolist to limit its greed and abandon all likely high profits to enjoy. This is explained in Baumol (1982, p. 3-4) as:

“A contestable market is one into which entry is absolutely free, and exit is absolutely costless. . . . the entrant suffers no disadvantage in terms of production technique or perceived quality relative to the incumbent, and that potential entrants find it appropriate to evaluate the profitability of entry in terms of the incumbent firms' pre-entry prices. . . . The crucial feature of a contestable market is its vulnerability to hit-and-run entry.”

In this sense, contestability theory offers an alternative theory of natural monopoly and the way in which consumers' interests are best served by the firm (Baumol, 1982). Unlike the conventional thinking, the theory doesn't recommend for a regulation of the natural monopoly.

“The contestability theory breaks the traditional thought in arguing against presumptive regulation of the monopolist. If the market were contestable, the pricing behavior of the incumbent firm would be disciplined by the threat of entry of competitors. In other words, the threat will induce something approaching competitive pricing on the part of the incumbent monopolist.”
(Bratland, 2004, p.4)

A perfectly contestable market exists only in the presence of potential competitors who constantly seek to enter (exit) the market to take advantage of available profit opportunities (avoid economic loss), suggesting that potential competition is a crucial feature of perfect contestability (Martin, 2000). Perfect contestability further assumes competitive behavior among incumbents themselves not just with respect to potential entrants. Therefore, contestability theory represents a distinct move away from the SCP approach to industrial organization theory. Amavilah (2012) maintains that true contestability exists if:

- The profit for all firms in the industry remains zero. Therefore, a profit level exceeding zero (or a positive profit) motivates competition;
- Inefficiency of any kind is not allowable. The system eliminates inefficiency as it associates with a positive short-run profit;
- Price for the outputs should always be set equivalent to the marginal cost of production and predatory pricing is not allowable. A price above marginal cost attracts new entrants.

If these conditions are met, market structure, in itself will not be a worry as argued by the SCP theorists. In other words, high concentration will not have pressure on performance and remains a negligible case for regulatory intervention (Spulber, 1989). Regulatory involvement is needed to ensure the above mentioned conditions: efficiency, price and others (Amavilah, 2012).

Panzar and Rosse Model

The most commonly used non-structural model in studies (especially in banking) is the Panzar and Rosse approach (Rosse and Panzar, 1977; Panzar and Rosse, 1987). The models recognize that firms behave differently depending on the market structures in which they operate (Baumol, 1982). It also does not ignore the relationship between market contestability and revenue behavior at the firm level which the structural methods do (Perera et al., 2006).

The model is introduced as a test for imperfect market structures applying a comparative statics from revenue function and factor price elasticity (Panzar and Rosse 1987). The result determines the degree of competition or measures the market power as well as competition conditions in a sector. Panzar and Rosse's approach is based on the idea that firms employ different strategies based upon the price, in response to changes in input costs of the market structure in which they operate (Leon, 2014).

In order to measure competitiveness of an industry, Panzar and Rosse (1987) had developed H-statistic whose value extends between $-\infty$ to $+1$. The competitiveness H measure is formulated as the sum of the elasticities of the reduced form firm revenue equations with respect to the firm's input prices. A perfect competitive market will have an h-statistic of 1 as an increase in production factor prices proportionally augments the revenue of the firm ensuring a long term equilibrium level of performances. In contrast, for a monopoly the H-statistic is inferior or equal to zero as the revenue of a monopoly negatively induces a change in market entry costs that proportionally increases the marginal costs and reduces production and revenue equilibrium. Therefore, when the costs of a company operating in a monopolistic or collusive market increase, this entity raises its prices, taking into account conditions proper to its situation as a monopoly, and its revenues diminish (Rosse and Panzar, 1977; Panzar and Rosse, 1987; Vesala, 1995).

The PR model can be explained by its simplicity and the fact that it does not pose stringent data requirements. The test can be derived by running only one equation requiring a few numbers of variables and banks. As a result, the PR model can be obtained from a relatively small number of observations, which is crucial for studies on less mature banking industry (Leon, 2014). Furthermore, Shaffer (2004) points out that the PR model is robust to the extent of the market as no specific market definition appears in the revenue equation. Only the data from firms included in the sample are required to estimate revenue equation. This is a huge advantage in cross-country studies (Claessens and Laeven, 2004).

The major pitfall concerns the econometric identification and the interpretation of the H-statistic. Brandt and Davis (2000) show that the H-statistic can be negative in a competitive market and positive for a monopoly. A negative H-statistic can occur even in highly competitive conditions in the short-run with a fixed number of firms (Shaffer, 1983) or in the case of constant average cost (Bikker et al., 2012). Shaffer and Spierdijk (2013) point out that the H-statistic can be positive in highly noncompetitive settings. Furthermore, for firms facing constant elasticity of demand, theoretical studies report the H-statistic as alternatively increasing Shaffer (1983) or decreasing Panzar and Rosse (1987) function of market power.

Summary

IO is concerned with the structure of industries in the economy and the behavior of firms and individuals in these industries. This theory has not only grown within its field, but also in others, such as business management especially in the areas of strategic management. The SCP paradigm appears to be the most pertinent and long time used approach to assess industry structure studies. It basically attempts to look at the market structure of industries and determine their conduct and performances. Various theories that challenged the SCP are also witnessed including the efficient hypothesis, contestable market theory and quiet life hypothesis etc. Even in recent period, a reverse approach to look at the structure and performance of a given industry by observing the conduct of firms has emerged. In other words, the new wave of research like NEIO set out to understand the institutional details of particular industries and use this knowledge to test specific hypotheses about specific firm behavior. Nevertheless, NEIO appears to be the alternate paradigm for imperfect market analysis than the one totally revoking the methodological approach of the SCP, in fact with friction between the two paradigms. Some authors like Bhuyan (2014) has compared these two methods of analyzing market power and concluded that the debate over the use of the SCP approach versus the use of the NEIO approach to analyze market power will continue. The debate however is not only among the aforesaid paradigms but still there is unresolved inconclusiveness among the structural theorists like SCP and efficient market theorists.

References

- Adam ,S. (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations*, London.
- Allen, A. and Shaik, S.(2005).Performance of the Agricultural Commodity Trucking Sector in the United States. Paper presented at the Southwestern Economics Association Annual Meeting, March 23-26, New Orleans, LA.
- Amavilah, V. H. (2012). Baumol, Panzar, and Willig's Theory of Contestable Markets and Industry Structure: A Summary of Reactions
- Bain, J. (1951).The Relation of profit Rate to Industry Concentration, *American Manufacturing*, 1936-1940, *Quarterly Journal of Economics*, vol.65 (3), pp.293-324.
- Bain, J. (1956). *Barriers to New Competition*,Harvard University Press, Cambridge, MA
- Bain, J. (1968). *Industrial Organization* 2nd edition, John Wiley and Sons Inc., New York.
- Bandt, O. and Davis, E. (2000). Competition, Contestability and Market Structure in European Banking Sectors on the Eve of EMU, *Journal of Banking and Finance*, 24,pp. 1045-66.
- Barney, J.B. (2007). *Gaining and Sustaining Competitive Advantage*. Oxford: Oxford University Press.
- Barthwal, R. (2010). *Industrial Economics, An introductory textbook*. 3rd edition. New Dehli, New Age International Publishers.
- Baumol, W., Panzar, T.and Willig, R.(1988). *Contestable Markets and the Theory of Industrial Structure*, Harcourt Brace Jovanovich, New York, Revised version,
- Beaulier, S.A./ Mounst, W.M.S. (2008). Asymmetric Information about Perfect Competition: The Treatment of Perfect Information in Introductory Economics Textbooks. Doi: http://www.scottbeaulier.com/Information_Version_2.doc
- Belleflamme, P., and Peitz, M. (2010). *Industrial organization, markets and strategies*. Cambridge University Press.
- Berger, A. (1995). The profit–structure relationship in banking, Tests of market- power and efficient-structure hypotheses. *Journal of Money, Credit and Banking*, 27(2), 404–431.
- Berger, A., and Hannan, T. (1989). The Price-Concentration Relationship In Banking, *Review of Economics and Statistics*, 71 ,pp.291-299.
- Berger, A., and Hannan, T. (1993). Using Efficiency Measures to Distinguish among Alternative Explanations of the Structure- performance Relationship in Banking, Federal Reserve Board Working Paper.
- Bikker, J. (2004). *Competition and Efficiency in a Unified European Banking Market*. Edward Elgar.
- Bikker, J. and Haaf, K. (2001). Competition, Concentration and their relationship: An empirical analysis of the banking Industry ,De Nederlandshe Bank (DNB).
- Bratland, J. (2004). Contestable Market Theory as a Regulatory Framework: An Austrian Postmortem,*Quarterly Journal of Austrian Economics*, 7(3), 3-28.
- Bresnahan, T. (1989). Empirical Studies of Industries with Market Power, *Handbook of Industrial Organization*, vol. II. Elsevier, Amsterdam.
- Bresnahan, T.and Schmalensee, R. (1987). *The Empirical Renaissance in Industrial Economics*, Oxford: Basil Blackwell. Reprint of a special issue of the *Journal of Industrial Economics*, 35(4), pp.1-19.
- Cabral, L. (2000). *Introduction to Industrial Organization*. MIT Press, Cambridge, MA
- Carlton,D and Perloff,J (2000), *Modern Industrial Organization*, 3rd Edition, Addison-Wesley. Book web-page: http://occawlonline.pearsoned.com/bookbind/pubbooks/carlton_awl/

- Chortareas, G. Garza-Garcia, J. and Girardone, C. (2009). Banking Sector Performance in Latin America: Market Power versus Efficiency, Centre for Global Finance, Working Paper Series No. 01/09.
- Church, J., and Ware, R. (2000). Industrial organization: a strategic approach. McGraw-Hill.
- Coase, Ronald H. (1937), "The Nature of the Firm," *Economica* 4 (November), pp. 386–405.
- Comanor, W. (1971). Comments (on Weiss, 1971). In M.D. Intriligator (Ed.), *Frontiers of Quantitative Economics* (pp. 403-408).
- Comanor, W. and Wilson, T. (1967). Advertising Market Structure and Performance. *Review of Economics and Statistics*, 49(4), pp.423-40.
- Corley, T. (1990). Emergence of the theory of industrial organization, 1890-1990, *Business and Economic History*, 19, pp.83-92.
- Dahl, D. and Hammond, J. (1977) *Market and Price Analysis: The Agricultural Industries*. New York: McGraw-Hill.
- Demsetz, H. (1973). Industry Structure, Market Rivalry and Public Policy, *Journal of Law and Economics*, Vol.16, No.1, pp.1-9.
- Demsetz, H. (1974). Two Systems of Belief about Monopoly, in H. Goldschmid (ed.), *Industrial Concentration: The New Learning*, Boston: Little, Brown.
- Edwards, S., Allen, A. and Shaik, S. (2006). Market Structure Conduct Performance (SCP) Hypothesis Revisited using Stochastic Frontier Efficiency Analysis. In Selected Paper submission at the AAEA Annual Meetings. Long Beach, CA.
- Esposito, L. and Esposito, F. (1971). Foreign Competition and Domestic Industry Profitability, *Review of Economics and Statistics*, 53, pp. 343-53.
- Ferguson, P., and Ferguson, G. (1994). *Industrial Economics: Issues and Perspectives*. 2nd edition. The Macmillan Press LTD.
- Fu, X. and S. Heffernan (2009), "The effects of reform on China's bank structure and performance", *Journal of Banking and Finance*, 33(1), 39–52.
- Gale, B., and Branch, B. (1982). Concentration Versus Market Share: Which Determines Performance and Why Does it Matter?, *The Antitrust Bulletin*, 27 (Spring), 83-103.
- George, M. and Singh, A. (1970). Structure, conduct and performance of wholesale vegetable competitive group Market in Punjab. *Agric. Marketing*, 13: 1-9
- Gilbert, R. (1984). Bank Market Structure and Competition - A Survey, *Journal of Money, Credit and Banking*, 16, pp. 617-45.
- Goddard, J., Molyneux, P., Wilson, J. and Tavakoli, M. (2007). European banking: an overview. *Journal of Banking and Finance*, 31 (7), pp.1911-35.
- Goldschmid, H., Mann, H. and Weston, J. (1974). *Industrial Concentration: The New Learning*, New York: Columbia University Press.
- Hamprey, M. (1940). *The Economics of Ancient Greece*, Macmillan, New York.
- Hicks, J. (1935). *The Theory of Monopoly*. *Econometrica*, 3, 1-20
- Kapunda, S.; Molosiwa, T. (2012). Economic performance of commercial banks in Botswana : a structure-conduct-performance approach, *International journal of economics & business studies* Vol. 2.2012, 1, pp. 3-12.
- Katib, M. (2004). Market Structure and Performance in the Malaysian Banking Industry: A Robust Estimation, Available via the Internet: <http://papers.ssrn>.
- Léon (2014). Measuring competition in banking : A critical review of methods: *Etudes et Documents* no 12, CERDI.
- Leibenstein, H. (1966). Allocative efficiency versus X-efficiency, *American Economic Review* Vol. 56, pp. 392-415.
- Lipczynski, J., Wilson, J., and Goddard, J. (2013). *Industrial Organization, Competition, Strategy, Policy*. FT Prentice Hall, London, second edition.
- Lustgarten, S. (1975). The Impact of Buyer Concentration on Manufacturing Industries, *Review of Economics and Statistics* 57, pp. 125-132.
- Martin, S. (2000). *The Theory of Contestable Markets*. Department of Economics, Purdue University.
- Mason, E. (1939). Price and Production Policies of Large-Scale Enterprise. *American Economic Review*, 29(1), pp.61–74.
- Maudos, J. (1998). Market Structure and Performance in Spanish Banking Using a Direct Measure of Efficiency", *Applied Financial Economics*, 8, 2, pp.191-201.
- McWilliams, A./ Smart, D.L. (1995). The Resource-Based View Of the Firm. *Journal of management inquiry*, 4(4), 309-316.
- Mendes, V. and Rebelo, J. (2003). Structure and Performance in the Portuguese Banking Industry in the Nineties, *Portuguese Economic Journal*, 2, pp.53-68.

- Meschi, M. (1997). Analytical Perspectives on Mergers and Acquisitions: A Survey. CIBS Research Papers in International Business, 5(97). Doi: <http://www.sbu.ac.uk/cibs/acrobats/5mesch97.pdf>
- Mohamed, Z., Shamsudin, M., Latif, A., and Mu'azu, A. (2013). Measuring competition along the supply chain of the Malaysian poultry industry. International Conference on Social Science Research, 4-5 June 2013, Penang, Malaysia.
- Molyneux, P. and Forbes, W. (1995). Market Structure and Performance in European Banking, Applied Economics, 27, pp.155 – 59.
- Moore, R. (1973). Concentration, Technology, and Market Power in Banking, Is Distance Dead? Federal Reserve Bank of Dallas Financial Industry Studies, December 1998, pp. 1-10.
- Narver, J. and Savitt, R. (1971), The Marketing Economy: An Analytical Approach. New York: Holt, Rinehart and Winston.
- Neuberger, D. (1997). Structure, Conduct and Performance in Banking Markets. Thuenen-Series of Applied Economic Theory 12. University of Rostock, Institute of Economics, Germany
- Panzar, J. and Rosse, J. (1987). Testing for “Monopoly” Equilibrium, the Journal of Industrial Economics, 35, 443–456.
- Papadopoulos, S. (2004). Market structure, performance and efficiency in European banking, International Journal of Commerce and Management, 14, 1, pp. 79-92.
- Peltzman, S. (1977). The Gains and Losses from Industrial Concentration, Journal of Law and Economics 20 (October), pp.229-63.
- Phillips, A. (1976) A Critique of Empirical Studies of Relations between Market Structure and Profitability. The Journal of Industrial Economics. 24 (4). p. 241-249.
- Porter, M. (1981). The contributions of industrial organization to strategic management. Academy of management review, 6(4), pp.609-620.
- Purcell, D. (1973). An Approach to Research on Vertical Integration: The Beef System in Oklahoma, American Journal of Agriculture Vol. 55, No. 1.
- Ramsey, J. (2001). The Resource Based Perspective, Rents, and Purchasing's Contribution to Sustainable Competitive Advantage. Journal of Supply Chain Management. 37(3), pp.38–47.
- Roth, A. (2004). The Ecology of a Dual Television Market: Competition and Diversity in the Netherlands. Presented at the 6th World Media Economics Conference, Montreal, Canada.
- Salmon, M. and Miller, M. (1985). Dynamic games and the time inconsistency of optimal policy in open economies. Economic Journal 95 (Supplement), 124–137
- Salvatore, D. (1998). International Economics, Sixth Edition Prentice Hall.
- Sathye, M. (2005). Market Structure and Performance in Australian Banking, Review of Accounting and Finance, Vol. 4, N°2, pp.107-122.
- Seelanatha, L. (2010). Market Structure, Efficiency and Performance of Banking Industry in Sri Lanka, Banks and Bank Systems, Vol. 5, No.1.
- Shafer, S. (2004). Patterns of competition in banking. Journal of Economics and Business, Vol. 56, 287-213.
- Shepherd, W. (1972). The Elements of Market Structure. Review of Economics and Statistics, Vol.54, pp. 25-37..
- Shepherd, W., and Wilcox, C. (1979). Public policies toward business. 6th edition. Richard D. Irwin, Inc.
- Shepherd, W. (1979). The Economics of Industrial Organization, Prentice-Hall, England Cliffs, 1979, p. 14.
- Smirlock, M. (1985). Evidence on the (Non) Relationship Between Concentration and Profitability in Banking, Journal of Money, Credit and Banking, Vol. 17, N°1, pp.69-83.
- Smit, H., and Trigeorgis, L. (2004). Strategic investment: Real options and games. Princeton, NJ: Princeton University press.
- Spulber, D. 1989. Regulation and Markets. Cambridge: MIT Press.
- Stigler, J. (1968). The organization of industry. Homewood: Irwin.
- Tirole, J. (1988). The Theory of Industrial Organization. The MIT Press.
- Tucker, B. (2010). Survey of Economics, 7th edition, Cengage South-Western.
- Tung, G. and Lin, C., and Wang, C. (2010). The market structure, conduct and performance paradigm re-applied to the international tourist hotel industry. African Journal of Business Management, 4(6), pp.1116-1119.
- Van Hoose D. (2009), The Industrial Organization of Banking, Bank Behavior, Market Structure, and Regulation, Springer -Verlag, Berlin Heidelberg.
- Vesala, J. (1995). Testing for competition in banking: Behavioral evidence from Finland. Bank of Finland Studies, E:1, Helsinki.
- Weiss, L. (1971). Quantitative Studies of Industrial Organization. In M.D. Intriligator (Ed.), Frontiers of Quantitative Economics (pp.362-403). Amsterdam: North-Holland
- Williams, D. M., Molyneux, P., Thornton, J., 1994. Market structure and performance in Spanish banking. Journal of Banking and Finance 18, 433-443