The State of Competition in the Philippine Manufacturing Industry

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Abstract

Competition policy is integral to the process of liberalization of international trade regime and deregulation in domestic markets. This paper shows that even if trade barriers are removed, there are other factors that can impede the pro-competitive effects of trade liberalization. These include the presence of non-tradables, absence of effective competition due to the ability of domestic firms to increase prices and still prevent imports from entering the market, and presence of cartels which may divide the markets through price-fixing or geographic market sharing agreements. The case study on cement provides some evidence that despite trade liberalization and deregulation, the highly concentrated nature of the industry enables coordination between firms and allows them to exercise market power. This prevents effective competition from taking place in the industry.

These barriers inhibit domestic and international prices from converging, thus muting the gains from trade liberalization. While liberalization may be a precondition for the growth of a free market, it does not, by itself, guarantee effective competition. In the absence of competition laws, there is a risk that liberalization may not be sufficient to foster effective competition and it would also be difficult to control possible abuses of dominant positions by large scale firms including multinationals. If effective competition has to emerge, trade reforms have to be accompanied by the creation of competitive market and industry structures.

Executive Summary

Empirical evidence suggests that the Philippine manufacturing industry developed under a complex array of policies of protection, regulation, and promotion. While these policies led to an increase in investments during the early years of industrialization, over the years, they have become barriers to resource mobility and competition and failed to provide an efficient mechanism for resource allocation. The government policy of regulation, promotion, and protection encouraged greater concentration as a way to compete against imports and achieve economies of scale. This resulted in a highly concentrated manufacturing industry with small groups of oligopolists being able to exercise market power.

After 20 or so years of implementing trade liberalization, the real growth of the manufacturing sector has been slow and no major increase in the size of industry and systematic movement of resources towards the manufacturing sector have been observed. One possible reason for this is that barriers to competition continue to exist and are preventing the manufacturing sector from maximizing the gains from trade liberalization.

The industry studies reviewed in this paper showed that manufacturing industries are characterized not only by heavy protection and regulation but also by high concentration. The studies also indicated the presence of largely regulatory barriers which included import restrictions and high tariffs as well as structural barriers such as economies of scale and huge capital requirement. Behavioral barriers like excess capacity and horizontal price fixing were also found. The presence of high trade barriers combined with generous long-term investment incentives contributed to the oligopolistic structure of Philippine manufacturing which impeded competition from abroad was impeded. This limited the potential for price competition among producers, thus failing to nurture the culture of competition in the country.

Present estimates showed that for the manufacturing industry as a whole, concentration in most sectors remained high from the late 1980s to the mid-1990s. The four-firm concentration level for the whole manufacturing industry increased from 70.88 in 1988 to about 74 in 1994 to 1995. The estimated price cost margins, which are rough measures of profitability, moved in the same direction as concentration levels. The price cost margins (PCM) increased from 30 percent in 1988 to 34 percent in 1994 and to 36 percent in 1995. Some highly concentrated sub-sectors were found to have very high price cost margins such as tobacco (PCM: 57 percent), glass and glass products (PCM: 52 percent), food manufacturing (PCM: 41 percent), and other non-metallic mineral products (PCM: 40 percent). The regression results confirmed the positive correlation/relationship between concentration and profitability in Philippine manufacturing. Given the limited R&D and S&T activities in the country, particularly the underinvestment by the private sector in manufacturing and agriculture R&D/S&T activities, we are inclined to believe that the structuralist school is more applicable to us. Future studies should take a more in-depth analysis of this issue. The current paper only gives a general sense of the extent of competition in the manufacturing industry owing to the broad nature of the sector and the absence of reliable data. Further industry cases are needed not only to extend the variety of industries studied but to delve into details. This would entail collection of price data, monitoring behavior of individual firms and identifying restrictive business practices and other barriers to competition. These are the only means through which conclusive evidence on the state of competition in manufacturing could be reached.

This paper also explores the case of the cement industry to illustrate the behavior of firms after the implementation of deregulation and trade liberalization in the industry. Prior to these reforms, the industry was engaged in collusion facilitated by their market sharing agreements. These were accepted practices in the past as they were sanctioned by government regulations. Cement is a homogeneous product and there were relatively not too many firms in the industry. A strong trade association also existed in the industry. Although the import restrictions on cement were already lifted and tariffs were set at a low rate of five percent, its high weight-to-value nature with high transport and handling costs easily makes it a non-tradable good. As such, competition from imports is limited. These characteristics of the industry bolster the presumption that the firms do not act on their own interest but coordinate their actions. Despite substantial market-oriented reforms in the industry, concentration levels remained high and major players continue to collude and exercise market power. The simultaneous price increases by firms in the face of excess supply, weak demand, and entry of imports is inconsistent with competitive behavior and could only be explained in a framework with coordination where firms pursue their own best communal interests.

While liberalization may be a precondition for the growth of a free market, it does not, by itself, guarantee effective competition. In the absence of competition laws, there is a risk that liberalization may not be sufficient to foster effective competition and it would also be difficult to control possible abuses of dominant positions by large scale firms including multinationals. If effective competition has to emerge, trade reforms have to be accompanied by the creation of competitive market and industry structures.

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VI. Introduction

As in most developing countries, the Philippines adopted the then predominant import substitution model in its quest for industrialization during the postwar years. A complex array of protective policies, investment incentive measures to promote selected industries, and regulatory controls emerged. While these instruments of protection, promotion, and regulation promoted and stimulated investments in the early stages of industrialization, over time, they came to impose barriers to resource mobility and competition. They became associated with the protection of entrenched incumbents and stimulated rent-seeking behaviour.

Being the darling of policymakers, domestic manufacturers in the country have received heavy protection through high tariffs, quantitative restrictions, and administrative allocations. These policies, however, failed to provide an efficient mechanism for allocating domestic resources among manufacturing subsectors (Bautista, Power et al). Instead, they have led to concentration of the manufacturing industry and sheltered domestic markets. In this environment, small groups of entrenched oligopolists have been able to extract monopoly power in the market. Not surprisingly, these groups tend to wield significant economic and political influence in the country.

With the demise of the import substitution model, the government was prompted to institute policy reforms consistent with the requirements of a competitive market environment. The government responded to the regulatory constraints imposed by the complex regulatory maze through deregulation and liberalization. It liberalized the trade regime by removing tariffs and non-tariff barriers, reducing the anti-export bias, and increasing import competition. It also deregulated the economy by changing the set of rules that governed economic activities. All these reforms were aimed at removing barriers to competition, factor mobility and firm growth.

Yet even in a liberalized environment the efficiency of markets is not always guaranteed (World Bank and OECD, 1998). While trade liberalization promotes competition in domestic markets, there exist various impediments that can dilute the pro-competitive effects of import competition. Note that the ability of economic agents to exercise monopoly power is derived from the presence of barriers to competition. These barriers may be natural (as a function for example of economies of scale), strategic (due to the presence of few agents in markets) or policy generated (erected by anticompetitive instruments of regulation, promotion, and protection of economic activity).

In the last twenty or so years, there has been real progress in the liberalization of tariff and non-tariff barriers. One important issue that needs to be addressed is whether this trade liberalization has resulted in increased market contestability in the manufacturing sector. The current study attempts to assess the general market conditions and current state of

competition in the manufacturing industry. It will also address the issue of whether trade liberalization has led to greater competition and market entry opportunities.

Section II briefly describes the major theories of competition policy. Section III reviews existing literature on the state of competition in Philippine manufacturing industries. Section IV assesses the overall performance of the manufacturing sector before and after trade liberalization. Section V presents a more detailed analysis of industry structure and concentration in the manufacturing sector. Section VI provides a case study on cement manufacturing. Section VII presents the policy implications and recommendations of the paper.

VII.   Theoretical Underpinnings of Competition Policy

A.   Competiton, Market Power, and Barriers to Entry

Following the UNCTAD (1997), "competition" refers to the process of rivalry among firms and to market structures conducive to such rivalry or potential rivalry. Competitive rivalry may take place in terms of price, quantity, service, or combinations of these and other factors that customers may value (World Bank and OECD Study, 1998). "Competition policy" refers to policy aimed at preserving and promoting competition, both by enforcing competition law against restrictive business practices (RBPs) by firms and by influencing the design or implementation of other governmental policies or measures affecting competition (UNCTAD, 1997). Khemani and Dutz defined "competition policy" as government measures that directly affect the behavior of enterprises and the structure of industry. Competition policy includes both (1) policies that enhance competition in local and national markets such as liberalized trade policy, relaxed foreign investment and ownership requirements, and economic deregulation; and (2) competition (antitrust or antimonopoly law) designed to prevent anticompetitive business practices by firms and unnecessary government intervention in the marketplace.

Competition forces firms to become efficient and to sell a wider range of goods and services at lower prices. The World Bank and OECD Study (1998) noted that in a competitive economy, price and profit signals tend to be free of distortions and create incentives for firms to reallocate resources from lower to higher-valued uses. Decentralized decision making by firms promotes efficient allocation of society's resources, increases consumer welfare, and gives rise to dynamic efficiency in the form of innovation, technological change, and economic progress.

Firms, however, can have the incentive to obtain market power, i.e., the discretionary control over prices and other related factors determining business transactions. Market power refers to the ability of firm, unilaterally or in collusion with others, to profitably raise price and maintain it over a significant period of time without competitive response by other existing and/or potential firms (Khemani). Firms have market power individually or collectively when buyers do not have enough choice of alternative independent sellers. In a competitive market economy, consumers may buy from any firm and firms, in general, can enter any market. There can never be market power when entry is easy. As soon as one firm or a group of firms attempts to increase prices or lower quality from competitive levels, a new firm can come in to serve the market.

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Firms may gain market power by limiting competition, i.e., by erecting barriers to trade, entering into collusive arrangements to restrict prices and output, and engaging in other anticompetitive business practices. Barriers to entry are necessary for market power (refer to Box 1). Market power can be created through mergers or agreements between competitors not to compete or through restrictive vertical arrangements and predatory pricing which is an abuse of preexisting market power. A firm's exercise of market power can harm consumers and other producers through higher prices (rather than competitive prices), reduced output, and poorer quality products. In general, the above examples of imperfect competition are viewed as market failures that result in inefficient allocation of resources and negatively affect industry performance and economic welfare. These market failures enable firms to deliberately reduce output in order to extract higher prices at the expense of consumers and society in general (World Bank and OECD Study, 1998).

Barriers to entry can be categorized as either structural or behavioral. Behavioral barriers represent abuse of dominant position where "relatively large" firms engage in anti-competitive c onduct by preventing entry or forcing exit of competitors through various kinds of monopolistic conduct including predatory pricing, market foreclosure, etc (see Box 1). Behavioral restraints are classified into two: horizontal and vertical restraints. The former refer to agreements that are often referred to as "naked" restraints of trade, cartel behavior, or collusion. Examples are price-fixing, bid rigging, and allocation of territories or customers, and output restriction agreements. Vertical restraints are contractual agreements between supplier and purchasers/retailers in both upstream and downstream markets. Examples include:

- Resale price maintenance agreements: retail price is fixed by the producer or price floors or ceilings are imposed

- Exclusive distribution agreements: distributors are assigned exclusivity within a geographic area or over particular types of clients, or over specific products

- Exclusive dealing agreements: downstream firms are prohibited from dealing with competing producers or distributors

- Tie-in sale agreements: downstream firms are required to purchase a certain range of products before being allowed to purchase a particular product

- Quantity forcing: downstream firms are required to purchase a minimum quantity of a product.

B.   Theories on Competition

There are a number of theories in industrial organization economics explaining the need to preserve competition. The two major opposing schools of thought can be broadly classified into two:

- structuralist school as developed by Joe Bain and contemporaries

- market efficiency model or Chicago school which is attributed to Stigler and Demsetz.

Box 1: Structural and Behavioral Barriers to Entry

Structural

Regulatory barriers on entry imposed by government policies

- Special permits, license to operate
- Regulations influencing the use of some inputs
- Tariffs, quotas, and other non-tariff barriers
- Anti-dumping and countervailing duties
- Discriminatory export practices
- Exclusionary lists
- Ownership restrictions

Other barriers

- Sunk costs: costs that a firm cannot avoid by withdrawing from the market, they are a sort of entry fee
- Absolute cost advantage: access to natural resource or human resources
- Economies of scale: unit cost of production fall with increasing output
- Large capital requirements
- Network industries: firms that are competitors share some critical facility like transportation and telecommunications

Behavioral
- Limit pricing: pricing by an incumbent firm of pricing so low that given the economies of scale in a market, there would be no room for an entrant if it believed the incumbent would maintain its pre entry level of output after entry
- Predatory pricing: practice of a dominant firm selling its products at prices so low as to drive competitors out of a market, prevent new entry, and successfully monopolize the market
- Excess capacity
- Product differentiation and advertising
- Horizontal restraints: collusion (price-fixing agreements, market sharing territorial arrangements, bid rigging), price discrimination
- Vertical restraints: resale price maintenance, exclusive dealing
- Foreclosure and exclusion
- Tactics to increase rivals' costs
- Contracts

Source: A Framework for the Design and Implementation of Competition Law and Policy, the World Bank and the Organisation for Economic Co-operation and Development, 1998.

While both schools share the same objective, i.e., to promote the efficient use of resources, the debate stems from the choice and application of different policy instruments.

The structural theory of market performance states that firms respond to entry but are able to earn persistent profits when the structural characteristics of markets make entry difficult. Bain identified the conditions of entry as technological features of markets that affect the exercise of market power. Economies of scale, absolute cost advantages, and product differentiation were the primary determinants identified as entry barriers that enable a firm to maintain price above average cost (Gilbert).

The structuralist school emphasizes the interaction between market structure and collusive and exclusionary business practices by firms that enable them to exercise market power and persistently earn excess profits (Khemani and Dutz). The structuralist school is rooted on the traditional structure-conduct-performance (SCP) paradigm of industrial concentration which states that a concentrated industry (structure) will facilitate collusion (conduct) and hence monopoly pricing (performance). Firms operating in oligopolistic industries with large market shares are more likely to coordinate their pricing and output or to unilaterally engage in anticompetitive behavior. Khemani and Dutz noted that in the past the emphasis was on the role of market structure, but today, the focus is more on pricing and output policies affecting market structure while aiming at excluding competition such as advertising, research and development, contractual arrangements, and preemption of input sources and distribution channels.

The Chicago school was developed in reaction to the structuralist viewpoint that industrial concentration fosters collusion and hence, monopoly pricing. Demsetz (1973) argued that superior low cost firms would have higher profits and would grow to dominate their industries. Low costs lead to competition which in turn lead to concentration of industry (Leach, 1997). Advocates of the Chicago school say that a policy of industrial deconcentration would destroy efficiency with no benefit of lower prices to consumers.

Economists associated with the Chicago school maintain that markets are workably competitive and the market structure reflects differential efficiency, not strategic behavior. They argue that collusion is difficult to practice profitably in all but the most highly concentrated industries and is therefore not a serious problem (Stigler, 1968). Where competition is limited, collusion is primarily due to barriers to entry created by the government. They advocate the pursuit of economic efficiency as the unequivocal goal for competition policy. Failure to consider economic efficiency distorts the basic intent of competition policy. As a result, they favor a minimalist approach toward the implementation of competition policy. Competition law, in particular, should be restricted to preventing collusion, especially price fixing agreements (Bork 1978 and Posner 1969 as cited in Khemani and Dutz).

The two schools of thought also differ with respect to the interpretation of the positive relationship between concentration and profits found in empirical studies. The structuralist school maintains that the positive relationship between concentration and profits indicates monopolistic pricing. High levels of concentration are due to anticompetitive business practices that lead to resource misallocation. The Chicago school argues that the positive relationship reflects superior competitive performance by leading firms (with large market shares), independently of any ability to collude (Leach 1997). In the absence of government-erected barriers to entry, high levels of concentration and profits can be

maintained only if the leading firms constantly strive to be innovative and efficient (see Khemani and Dutz).

C.   Measures of Concentration and Profitability

Leach (1997) identified four measures of concentration using gross output as the size variable:

Four-firm concentration ratio (CR4) is the proportion of an industry's gross output accounted for by the four leading firms in the industry, i.e. it is the sum of the leading four firms' market shares.

The Herfindahl-Hirschman index (HHI) $= \sum_{i=1}^{n} ms_i^2$

where ms_i is the market share of the ith firm and n the number of firms, i.e., it is the sum of the squared market shares of all firms in an industry. HHI ranges from a minimum of 1/n for n firms of equal size to a maximum of 1 when there is only one firm.

The HHI is the most common measure used to assess concentration from shares of industry participants. In the US, the following thresholds are used as guidelines:

0-1000   unconcentrated
1000 – 1800   moderately concentrated
above 1800   highly concentrated.

The Horvath index (HI) $= ms_i + \sum_{j=2}^{n} ms_j^2 [1 + (1-ms_i)]$

i.e., it is the sum of the market share of the leading and a HHI of the remaining firms "reinforced by a multiplier reflecting the proportional size of the rest of the industry". The HI has a maximum of 1 and a minimum approaching ms_i.

The Rosenbluth index (RI) $= \dfrac{1}{2\sum_{i=1}^{n} (i - ms_i) - 1}$

where n is the number of firms in an industry, i is firm rank, and ms_i is market share. Like the HHI, the Rosenbluth index ranges from a minimum of 1/n for n firms of equal size to a maximum of 1 when there is only one firm.

Price-cost margins are commonly applied as measures of profitability in most concentration profits studies. The price-cost margin is defined as (Gross Output – Cost of Materials – Salaries and Wages)/Gross Output. Leach (1997) considered the price-cost margin as a crude measure of profitability because many important costs remained in the measure such as cost of capital, depreciation, income taxes, and head office expenses like advertising and R&D expenditures.

In diagnosing market dominance, the price-cost margin or Lerner index $L = [(\text{price} - \text{marginal cost})/\text{price}]$ is used as a direct measure of market power. Market power implies that a firm is able to charge prices substantially above than marginal cost. A firm without market power must charge a price that approximates marginal cost. Marginal costs, however, are difficult to estimate from firm level data because (1) accounting costs cannot be used to calculate the Lerner index and (2) mark-ups must reflect long term costs. Mark-ups above operating costs do not reflect capital costs.

VIII. Review of Literature

Previous studies on the state of competition in the manufacturing industry highlighted the high degree of industrial concentration in the country. Lindsey (1977) analyzed the level of concentration in the manufacturing industry, its determinants and its relationship to industry profitability. He characterized the manufacturing sector as monopolistic and identified capital intensity and degree of fabrication as barriers to competition. He concluded that the high levels of concentration led to monopoly power. E. De Dios (1986) examined the effects of tariffs on industrial structure. His results showed that tariff protection led to concentration. This suggested that firm concentration allowed the earning of monopolistic profits. He identified degree of capital intensity, minimum efficient scale and working capital requirement as barriers to entry that led to concentration.

The World Bank Report on the Philippines (1993) indicated that the country's manufacturing sector was highly concentrated and this contributed to the reduction of competition in the affected sub-sectors which hampered efficiency gains to structural reform. The Report, however, noted that by the end of the 1980s, the degree of concentration eased substantially. Its estimates revealed that the degree of concentration declined from 70 percent to 63 percent between 1983 and 1988. The Report concluded that, although oligopoly and rent-seeking behavior remained rife in the Philippines, there was evidence that the economy became more competitive and efficient in resource use towards the end of the 1980s.

At the aggregate level, evidence of improvement included numerous smaller new entrants to many industrial sectors and increased labor intensity in production. At a disaggregated level, concentration ratios were declining in export-oriented industries and smaller firms were increasing their share of production in sub-sectors largely geared to exports. Concentration eased for 19 out of 31 three-digit sub-sectors, led by the footwear and furniture sectors and followed by wearing apparel, leather, and food (PSIC 311), all of which were export-oriented. The leaders in heightened concentration were non-electrical machinery and nonferrous metals, followed by food (PSIC 312), beverages, and chemicals (generally domestic-oriented, except for nonferrous metals and chemicals). The most dramatic decline among sectors highly concentrated in 1983 was food (PSIC 311), from 82 percent to 59 percent, and by pottery and china, from 97 percent to 75 percent. For sectors with above average concentration in 1983, only nonferrous metals and glass experienced increases in concentration, but a number of highly concentrated sectors experienced virtually no change which reflected the incumbents' utter dominance of the market (as in tobacco) or the presence of a government-controlled market (as in petroleum or transport equipment).

The Barriers to Entry Study conducted by Lamberte, E. De Dios, et al in 1992 was the first industrial organization economics type of study and to date, the most comprehensive in

terms of scope and analysis. The Study was based on six case studies covering telecommunications, glass, man-made fibers, cement, iron and steel, and passenger cars and was supplemented by a review of existing industry studies conducted in the country at that time. The Study confirmed the presence of high concentration in Philippine industries which gave rise to uncontestable markets in these industries. The Study found that the entry barriers in several industries were generally induced by government policy and at times, these government policy induced barriers even reinforced the existing structural barriers to entry such as excess capacity, absolute advantages (through franchises, credit subsidies and fiscal incentives) and limit pricing (via price and rate regulation). Moreover, the presence of barriers to entry undermined the effectiveness of the structural reforms implemented during that time.

The micro level findings of the Study are:

➢ Concentration in the following sectors may have resulted from deliberate government policy of protection and promotion:

- Traditional natural monopolies such as telecommunications, power distribution, inter island shipping, and banking
- Favored industries under the government's progressive manufacturing programs which include cars, trucks, motorcycles, integrated steel mill, and synthetic fiber
- Special "modernization" programs for distressed industries like textiles and cement

➢ A cartel-like behavior was observed in flour milling, cement, and inter island shipping. The government was seen to have a hand in tolerating or abetting collusionary arrangements in these industries.

➢ Entry barriers negatively affect users as indicated by the price comparisons between domestic and border prices. Domestic prices were higher than border prices over long periods in car assembly, flat glass, synthetic fibers, and cement.

➢ Entry barriers served to keep inefficient firms operating or if these firms were efficient, allowed them to generate monopoly rents. This was apparent in cement, glass manufacturing, shipping, and pulp and paper.

In 1993, the PIDS carried out the Development Incentives Assessment (DIA) Project which had an Industry Studies component designed to analyze the response of Philippine manufacturing industries to the trade policy reform of the 1980s. Using concentration ratios estimated by the World Bank, Tecson (1996) noted that trade liberalization was accompanied by a deconcentration of manufacturing industries as indicated by a general pattern of decline in four-plant concentration ratios between 1983 and 1988. The average concentration ratio for manufacturing decreased from 70 percent in 1983 to 63 percent in 1988. Quantitative restrictions and import licensing, particularly of imported intermediate and capital goods, constituted powerful entry barriers in the industry. The whole post-war history of industrialization was characterized by a series of special programs and laws which granted privileges and incentives to selected firms and industries. While some of these policies remained in force, the trade policy reform provided firms with relatively greater access to supply and lower import prices of capital equipment and other production inputs. This

lowered some of the formidable barriers into industries. Furthermore, given the profitability of protected industries, new entrants were attracted to challenge the incumbents. Out of the 31 sectors, only eight showed an increase in concentration. These were beverages, tobacco, wood and cork products, industrial chemicals, glass and glass products, nonferrous metal products, electrical machinery, and professional and scientific equipment.

The DIA Project carried out the following industry studies: textile and garments, motorcycle and parts industry, meat and dairy processing, appliance, packaging, synthetic resin and plastic, agricultural machinery, and shipbuilding and repair. One important contribution of these studies (except for textile and garments and motorcycle and parts) was the inclusion of industrial organization issues in their analysis of trade policy. Concentration ratios and price-cost-margins were estimated and existing barriers to competition were identified.

The other industry studies included in the review were carried out by Tolentino and Philexport (1998 and 1999) on sugar, Mercado-Aldaba (1996) on passenger cars, and the DBP (1992) on cement and pulp and paper.

Table 1 presents the different manufacturing industry studies[2] conducted in the country during the nineties. A classification of the existing barriers to competition identified in the literature was made following the categories listed in Box 1. Barriers to entry can be either structural or behavioral. In the former, regulatory barriers are separated from other structural barriers. Regulatory barriers arise from the government policy of protection, regulation, and promotion.

Previous studies show that Philippine manufacturing was characterized not only by protectionism and heavy regulation but also by high concentration, notably in slaughtering, dairy processing, appliance, flat glass, pulp and paper, cement, sugar, synthetic fiber, textile, and local car manufacture and assembly sector as well as in motorcycles and parts where the government deliberately limited the number of industry participants. Government involvement in the economy also directly impeded competition through the creation of state-controlled monopoly in the iron and steel industry. The government-owned National Steel Corporation was the only producer of flat products.

All of the industries reviewed were found to be heavily regulated by the government. The structural barriers identified in the literature included economies of scale and huge capital requirement. These barriers affected the following industries: synthetic fiber, passenger cars, motorcycle and parts, dairy processing, appliance, flat glass, synthetic resin, shipbuilding and repair, cement, and pulp and paper. The behavioral barriers included excess capacity and horizontal price fixing and were found in the following industries: synthetic fiber, hot and cold milling and tinning, flat glass, cement, and sugar. Clearly, the government policy of regulation, promotion, and protection encouraged greater concentration as a way to compete against imports and achieve economies of scale.

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[2] For a more detailed discussion of these studies, interested readers are referred to the author's paper on "The State of Competition in the Philippine Manufacturing Industry: A Review of Literature"(unpublished paper, PIDS, February 2000).

Table 1: Empirical Evidence on Existing Barriers to Competition in Manufacturing

Manufacturing Sector	Market Structure	Regulatory Barriers	Structural Barriers	Behavioral Barriers
Synthetic Fiber Lamberte, E.de Dios et al, 1992	Monopoly	Import restrictions High tariffs	Huge capital investment	Excess capacity
Hot and Cold Milling and Tinning Lamberte, E.de Dios et al, 1992	Government-owned Monopoly	Import restrictions (quotas)		Excess capacity
Passenger Cars Mercado-Aldaba,1996 Lamberte, E.de Dios et al, 1992	Oligopoly	Local Content Program Tariffs and taxes Import ban on CBUs	Huge capital investment Economies of scale	
Motorcycle and parts Pineda, 1994	Oligopoly	Local Content Program	Economies of scale	
Slaughtering L. de Dios,1994	Oligopoly	Import restrictions		
Large-scale Meat Processing L. de Dios,1994	Oligopoly	Import restrictions		Product differentiation Advertising
Dairy Processing L. de Dios,1994	Oligopoly	High tariffs Import restrictions	Sunk costs Economies of scale Product perishability	
Appliance Lapid,1994	Oligopoly	Government protection	Economies of scale Access to distribution channels Capital requirements Technology acquisition	Product differentiation
Flat Glass Lamberte, E.de Dios et al, 1992 Medillo, 1994	Monopoly	Import restriction High tariffs	Huge capital investment	Excess capacity
Synthetic Resin: thermoplastic Banzon,1994	Oligopoly	Tariff protection Import restrictions	Huge capital requirement	
Shipbuilding and Repair Mendoza,1994	Oligopoly	Tariff protection Import restrictions	Huge capital requirements Technology acquisition	
Boatbuilding and Repair Mendoza,1994	Oligopoly	Tariff protection Import restrictions Bureaucratic		

		procedures		
Cement Lamberte, E.de Dios et al, 1992 DBP, 1992	Oligopoly	Import controls High tariffs PCIA approval to establish a new firm or expand an existing one	Huge capital investment Economies of scale	Horizontal price fixing
Pulp and Paper DBP, 1992	Oligopoly	High tariffs	Huge capital requirement	
Sugar Tolentino,1998 and 1999 Philexport	Oligopoly	High tariffs SRA intervention in the supply and price of sugar		Price fixing

This policy of high trade barriers combined with generous long-term investment incentives to domestic industries deterred competition from abroad and contributed to the oligopolistic structure of the Philippine manufacturing industry. With agreements to fix prices (in sugar and cement, for instance), prices are no longer the product of competition among rival producers but more of the outcome of negotiations between the government and a small number of producers. Price controls, thus result, not only in simply limiting the potential for price competition among producers, but in preventing the development of a culture of competition in the country.

IX.   Assessment of the Overall Performance of the Manufacturing Sector Before and After Trade Policy Reforms

A.   An Overview of Trade Policy Reforms and Protection Structure from the 80s to the 90s

Over the last two decades, there have been three major liberalization episodes in the country. The first major trade policy reform was implemented in 1981 as part of the conditionalities associated with a series of World Bank structural adjustment loans. Between 1981 and 1985, peak tariff rates of 70 to 100 percent were reduced to within a zero to 50 percent tariff range. This led to a significant reduction of both the average tariff and the variation in tariff protection across industries.

The second episode was legislated during the Aquino administration through Executive Order 470. This narrowed down the tariff range to within a three to 30 percent tariff range by the year 1995. The third most important tariff reform was pursued during the Ramos administration. Executive Order 264 further reduced the tariff range to within three to 10 percent by the year 2000[3].

Simultaneous with the implementation of the tariff reduction policy, quantitative restrictions have also been eliminated. The number of import restrictions fell from around 32 percent of the total number of PSCC lines in 1985 to only about three percent in 1996.[4]

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[3] For a full discussion of the various trade policy reforms, see Medalla, Tecson, et al, Catching Up With Asia's Tigers.

[4] De Dios L.

**Table 2: Effective Protection of Philippine
Manufacturing Industries: 1983, 1988, and 1994**

PSIC	Industry	1983	1988	1994
	Total Manufacturing	42.8	28.3	19.17
	Consumer Goods			
311	Food Processing	32.9	22.3	14.45
312	Food Manufacturing	11.0	21.3	50.26
313	Beverages	83.7	52.0	43.96
314	Tobacco	147.0	60.6	53.39
322	Wearing apparel except footwear	3.1	3.9	4.69
324	Leather footwear	-6.5	-5.3	0.22
332	Furniture except metal	-2.6	1.9	-0.07
386	Metal furniture	182.7	75.9	-4.51
	Intermediate Goods			
321	Textiles	92.8	30.6	1.93
323	Leather and leather products	-13.9	1.7	7.95
331	Wood and cork products	2.1	4.5	7.53
341	Paper and paper products	65.0	29.2	19.86
342	Printing and publishing	68.3	72.4	13.64
351	Industrial Chemicals	53.2	8.5	3.04
352	Other Chemical Products	37.7	44.8	29.14
353	Petroleum refineries	56.6	59.6	20.07
354	Petroleum and coal products	74.5	-5.5	-10.06
355	Rubber products	129.3	18.9	17.31
356	Plastic products	119.7	20.9	17.88
361	Pottery, china, and earthenware	224.1	4.7	3.56
362	Glass and glass products	67.1	37.4	20.21
363	Cement	79.2	42.4	19.49
369	Other non-metallic mineral products	280.3	17.4	18.40
	Capital Goods			
371	Iron and steel	38.3	80.5	9.12
372	Nonferrous metal products	-9.7	-11.3	-1.15
381	Fabricated metal products	82.3	66.3	28.74
382	Machinery except electrical	28.1	11.7	0.36
383	Electrical machinery	4.5	30.9	4.72
384	Transport equipment	50.6	48.8	57.32
385	Professional and scientific equipment	-13.2	21.0	1.09
	Others			
390	Miscellaneous manufacture	8.1	4.65	-0.83

Sources: Medalla , 1998

These series of trade policy reforms have significantly reduced the average level of effective protection from 44 percent in 1983 to 24 percent in 1995. For importables, although the effective protection rate (EPR)[5] declined from 87 percent in 1983 to 47 percent in 1995, it

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[5] The EPR concept is used to measure protection while the DRC framework is employed to determine economic efficiency. The EPR takes into consideration the protection given to the output and inputs of a specific activity.

was still well above the –1.4 percent EPR on exportables. This indicated that a strong bias still remained towards the production of protected importables.

While the three major liberalization episodes in the country reduced the average effective protection rate in manufacturing from a high level of 43 percent in 1983 to 19 percent in 1994, for sectors such as: food manufacturing, beverages, tobacco, other chemicals, and fabricated metal products protection remained at relatively high levels ranging from 29 to 53 percent (see Table 2). For some sectors such as transport equipment and food manufacturing protection even increased from 49 to 57 percent and from 21 to 50 percent respectively, between 1988 and 1994.

Using domestic resource cost (DRC)[6] as measure, empirical studies showed that trade reforms led to improvements in competitiveness. The DRC/SER (domestic resource cost/shadow exchange rate) ratio fell from 1.7 in 1983 to 1.5 in 1988 and to 1.18 in 1994. This indicated that as trade liberalization policies were implemented, firms tended to become more efficient.

B.   Did the past trade reforms result in desired structural changes?

With the introduction of trade reforms, we expect profound changes in industry structure involving both substantial shifts of resources between economic sectors and restructuring within industries. Trade liberalization is expected to drive the process of restructuring and reallocation of resources within and across sectors of the economy such that unprofitable activities contract while profitable ones expand.

Table 3 reveals that there has been very little systematic movement of resources in industry and manufacturing. It is the services sector which has been experiencing a major increase in size. The share of services has been increasing since 1980 from about 36 percent to 43.4 percent in 1997. At the outset of the trade reforms, industry had the largest share of 40.5 percent. Its share declined between 1980 and 1985 and since then, there has been no major change in terms of shifts in resources. Agriculture value added slightly increased its share between 1980 and 1985 and has dropped from 24.6 percent to 20.7 percent between 1985 and 1997.

The net effect of protection on output and inputs is indicated by the protection of the activity's value added. Thus, the EPR is computed as the proportionate increase in domestic value added over free trade value added.

[6] The DRC measures the social cost of domestic resources used per unit of net foreign exchange earned by the activity through export, or saved through import substitution. The DRC is compared with the social exchange rate (SER) which represents the opportunity cost od domestic resources used in all activities producing tradable goods. A DRC/SER greater (less) than one indicates comparative disadvantage (advantage) in the production of the tradable good. A DRC/SER greater than one also implies allocative inefficiency because if the tradable good is not produced, resources could be used in other activities which yield maximum benefits to society (see Medalla et al, **Catching Up With Asia's Tigers**, Volume II, 1996).

Table 3: Structure of Value Added (1985=100)

Sector	Pre Trade Policy Reforms	Post Trade Policy Reform			
	1980	1985	1988	1994	1997
Agriculture	23.50	24.58	23.58	22.36	20.68
Industry	40.52	35.07	35.24	34.71	35.91
Manufacturing	27.60	25.15	25.71	24.84	25.05
Services	35.98	40.35	41.19	42.93	43.41
Total	100.0	100.0	100.0	100.0	100.0

Source: National Statistical Coordination Board, National Income Accounts.

Table 4: Structure of Employment

Sector	Pre Trade Policy Reforms	Post Trade Policy Reform					
	1980	1985	1988	1994	1997	1998	1999
Agriculture	51.4	49.0	47.0	44.7	40.4	39.9	39.1
Industry	15.5	14.2	15.4	15.8	16.7	15.7	15.6
Manufacturing	11.0	9.7	10.3	10.3	9.9	9.5	9.6
Services	38.3	36.8	40.0	39.5	42.9	44.4	45.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Pante and Medalla, PIDS Working Paper 90-18, Yearbook of Labor Statistics (October Rounds), Reyes, de Guzman, Manasan and Orbeta, Social Impact of the Regional Financial Crisis in the Philippines (Preliminary Report).

In terms of changes in employment, Table 4 reveals that there has been no substantial change in terms of the contribution of industry to total employment. The manufacturing sector failed in creating enough employment to absorb new entrants to the labor force as well as those who move out of the agricultural sector. As Table 4 shows; prior to the trade reforms, the distribution of employment was biased against industry and manufacturing. The labor force was highly concentrated in agriculture with a share of 51.4 percent while industry had a share of only 15.5 percent. After the trade reforms, the share of agriculture has continuously dropped although apparently at a moderate pace while the share of services increased as it continually absorbed the labor force to become the largest provider of employment from 1997 to 1999.

Table 5 compares the performance of the Philippines in terms of value added distribution and average annual growth rates with other Southeast Asian developing countries. It is evident from the data that our neighboring countries registered significant reductions in the share of agriculture and substantial increases in the size of industry during the period 1986 to 1996. For the years 1993-1996, the average annual share of Philippine agriculture remained at about 22 percent while industry was only 6.3 percent. In contrast, the average annual share of agriculture in Indonesia dropped to 17.5 percent, 14.5 percent in Malaysia, and 10.6 percent in Thailand while the average annual industry share increased to 40.6 percent in Indonesia, 43 percent in Malaysia, and 39.4 percent in Thailand. In these countries, manufacturing has played a leading role with high average annual growth rates of 11.7 percent in Indonesia, 14.1 percent in Malaysia, and 11.8 percent in Thailand. On the other hand, the Philippines only managed to grow at an average rate of 5.8 percent during the

years 1993-1996. Indeed, the Philippines needs a significant amount of adjustment before there is complete convergence of sectoral shares to those of our neighbors.

Table 5: Sector Shares and Growth Rates: Philippines, Indonesia, Malaysia and Thailand

	Philippines		Indonesia		Malaysia		Thailand	
	1986-1992	1993-1996	1986-1992	1993-1995	1986-1992	1993-1995	1986-1992	1993-1995
Value Added								
Agriculture	23.32	21.95	21.2	17.5	18.5	14.5	14.3	10.6
Industry	34.96	34.98	37.8	40.6	37.9	43.0	35.9	39.4
Manufacturing	25.32	25.04	19.6	23.4	22.6	31.5	26.2	28.7
Services	41.72	43.07	41.0	41.9	43.6	42.5	49.8	50.0
Growth Rates								
GDP	3.31	4.97	7.4	7.6	7.2	9.0	9.8	8.6
Agriculture	1.94	2.42	3.8	2.1	4.0	2.5	4.1	1.9
Industry	3.17	6.31	8.9	10.5	9.9	12.1	13.4	11.0
Manufacturing	3.49	5.79	10.8	11.7	13.3	14.1	14.1	11.8
Services	4.21	5.21	8.0	7.3	6.2	8.3	9.1	8.3

Source: For the Philippines, estimates were based on National Income Accounts data from the National Statistical Coordination Board. For Indonesia, Malaysia, and Thailand, the estimates were taken from Sachs et al, **Promotion of Broad-Based Economic Growth in the Philippines**, 1998.

Note that there are two caveats here. First, the real appreciation of the peso has often been cited as the main reason for the apparent failure of the manufacturing sector to expand and create employment after liberalization. Second, the current state of data collection in the country still leaves much to be desired. One often wonders whether the services sector is still taken as the residual after GNP is calculated. Better measurement of new firms and industries created after liberalization as well as improved estimation of the expanding services sector, which is difficult, is critical to the above analysis.

X. Analysis of Industry Structure and Competition in the Manufacturing Sector

C. Industrial Structure and Performance

Table 6 presents the distribution of manufacturing value added for the years 1972, 1983, 1988, and 1994. Prior to the trade reforms, intermediate goods comprised the bulk of manufacturing value added with its unchanged share of 45 percent in both 1972 and 1983. Consumer goods followed with a share of 40 percent in 1972 and 34 percent in 1983. Capital goods registered a share which increased from 16 percent in 1972 to 20 percent in 1983.

After the trade reforms, the share of consumer goods rose to 44 percent in 1988 which made it the most important sector in terms of value added contribution. Although it fell to 40 percent in 1994, the sector still represented the bulk of manufacturing value added. The share of intermediate goods dropped to 39 percent in 1988 and to 37 percent in 1994. Due to the growing importance of electrical machinery (whose share steadily increased from 3 percent in

1972 to 7 percent in 1983 and 1988 and to almost 10 percent in 1994), the capital goods sector has slowly inched its way from a share of 16 percent in 1988 to 22 percent in 1994.

In the consumer goods sector, food processing, food manufacturing and beverages were the most important sub-sectors in 1994 as they comprised 67 percent of the sector's value added. In the intermediate goods sector, other chemicals and petroleum refineries represented almost 50 percent of the sector's value added while in the capital goods sector, electrical machinery together with iron and steel were the top sub-sectors with their combined shares of about 65 percent of the sector's value added.

A comparison of the economic performance of the manufacturing sector and its components for the periods 1972-1983, 1983-1988, and 1988-94 is presented in Table 7. The period 1972-83 represents the pre-tariff reform years while the next periods capture the post-tariff reform years. On the overall, manufacturing census value added grew at an annual average growth of 3.6 percent during the pre trade reform period 1972-1983. This declined to 0.9 percent during the period 1983-1988, but recovered to 6.6 percent in the period 1988-1994.

The average growth of employment continuously dropped from 5 percent prior to the trade reforms to 4 percent in 1983-1988 and to only one percent in 1988-94. During this period, pottery, china and earthenware, electrical machinery, professional and scientific equipment, leather footwear, and transport equipment registered the highest annual average employment growth rates which ranged from 10 to 13 percent. The number of establishments grew from 2.4 percent before the trade reforms to 10.3 percent in 1983-1988, but this fell to 3 percent in the period 1988-1994. In this period, the following sub-sectors posted the highest average annual growth rates in terms of number of establishments which ranged from 8 to 11 percent: glass and glass products, pottery, china and earthenware, industrial chemicals, and iron and steel.

Value added growth at the sub-sector level was highly variable. Eight manufacturing sub-sectors posted positive annual growth rates for the three periods under review. These included beverages, wearing apparel except footwear, printing and publishing, other chemicals, plastic products, pottery, china and earthenware, electrical machinery, and miscellaneous manufactures. Electrical machinery posted the highest average annual growth rate of 17 percent during the 1988-94 period.

Other manufacturing sub-sectors which were growing during the 1972-83 period registered negative average annual growth rates immediately after the implementation of trade reforms, i.e., 1983-88, but recovered in the succeeding period, 1988-94. These sub-sectors covered food manufacturing, leather and leather products, leather footwear, petroleum refineries, iron and steel, fabricated metal products, cement, machinery except electrical, and transport equipment which posted the highest average annual growth rate of 18 percent during the 1988-94 period.

Some manufacturing sub-sectors which posted negative annual average growth rates prior to the trade reforms experienced improvements in terms of economic performance as suggested by their positive average value added growth rates for the periods after the trade reforms. These included tobacco, paper and paper products, other nonmetallic mineral products, metal furniture and professional and scientific equipment which posted an average annual growth rate of 14 percent in the 1988-94 period.

Printing and publishing steadily grew from 14.4 percent to 17.5 percent and to 19.4 percent during the three periods under review. Other nonmetallic mineral products grew from a low 3 percent to 15.7 percent between the periods 1972-1983 and 1983-1988. Its growth rate further increased to 21.9 percent during the period 1988-1994. Fabricated metal products increased from 10.9 percent to 13.4 percent and to 21 percent while machinery except electrical rose from 12.5 percent to 14.5 percent and to 24.5 percent in all three periods under study. Except for fabricated metal products, the increasing trend in the growth of the subsectors' value added is not accompanied by corresponding increases in the growth of the subsectors' number of establishments and employment.

Table 9: Firm Size Distribution in Philippine Manufacturing
1972, 1983, 1988, 1994 and 1995 (in percent)

Number of Firms	1972	1983	1988	1994	1995
Small	83	78	84	72	82
Medium	7	9	7	12	8
Large	10	13	9	16	10
Employment	**1972**	**1983**	**1988**	**1994**	**1995**
Small	22	18	24	21	21
Medium	10	10	12	13	12
Large	68	72	64	66	67
Census Value Added	**1972**	**1983**	**1988**	**1994**	**1995**
Small	15	11	12	11	11
Medium	12	8	11	12	13
Large	74	81	77	77	76

Small-sized establishments employ 10 to 99 employees, medium-sized establishments have 100 to 199 employees while large establishments have 200 or more workers.
Sources: National Statistics Office, 1972, 1983, 1988, and 1994 Census of Establishments.

Textiles and wood and cork products performed poorly for all three periods under review. These subsectors experienced substantial reduction in their value added as suggested by their negative average annual growth rates prior and after the trade reforms. Food processing posted negative growth rates for the two succeeding periods under study, but was able to bounce back in the third period. Glass and glass products and petroleum and coal both had negative average annual growth rates prior to the trade reforms; although their performance improved immediately after the implementation of trade reforms, this was not sustained as they again posted negative growth rates in the third period. Other sub-sectors like industrial chemicals, nonferrous metal products and rubber products, which were characterized by positive value added growth rates before and immediately after the trade reforms, performed poorly in the last period 1988-1994.

Manufacturing has become more capital intensive from P65,600 per worker in 1983 to P110,610 per worker in 1988 (see Table 8). In 1994, the ratio increased to P135,306 per worker. Almost all sub-sectors followed the same rising trend except for nonferrous metal products and transport equipment whose capital/labor ratios dropped between 1988 and 1994.

Petroleum refineries had the highest capital/labor ratio followed by nonferrous metal products, cement, iron and steel, and industrial chemicals. Capital productivity in manufacturing slightly increased from 1.2 in 1983 to 1.4 in 1988, however, this dropped back to its pre tariff reform ratio of 1.2 in 1994. Three sub-sectors experienced rising capital productivity over the three years under study. These included transport equipment, professional and scientific equipment, and metal furniture. Tobacco had the highest capital productivity in 1994 while wearing apparel except footwear was far second. Labor productivity was rising from P79,280 per worker in 1983 to P157,510 in 1988 and to P166,580 in 1994. Petroleum refineries had the highest labor productivity followed by beverages and other chemicals. While almost all sub-sectors had rising labor productivity for all three years under study, petroleum and coal products, nonferrous products, and transport equipment witnessed reductions in their labor productivity between 1988 and 1994.

Table 9 presents the size structure of the manufacturing industry. Philippine manufacturing has often been characterized as having a dualistic size structure since the import substitution phase of the 1950s (World Bank, 1993). The table indicates that the industry is still dominated by a small number of very large firms. In 1995, large-scale establishments accounted for 76 percent of manufacturing value added and 67 percent of employment, although they represented only 10 percent of all firms. On the other hand, small establishments which represented 82 percent of all firms accounted for a 21 percent share of employment and only 11 percent of manufacturing value added. Medium-scale establishments which numbered 8 percent of all establishments accounted for 12 percent of employment and 13 percent of manufacturing value added.

D. Domestic Competition and Concentration

Concentration and Profitability

Table 10.1 presents the estimates of four-firm concentration ratios in the manufacturing sector for the years 1988, 1994, and 1995. After trade liberalization, the average four-firm concentration ratio in manufacturing remained high for all three years under review. It even went up slightly from 70.88 in 1988 to 73.63 in 1994 and remained at the same level in 1995. The estimates show that the manufacturing sector is highly concentrated with roughly two-thirds of the manufacturing industry having concentration ratios ranging from 70 to 100 percent. On the average, 73.6 percent of value added were from the top four firms in each manufacturing sub-sector.

Sub-sectors with high level of concentration are mostly intermediate and capital goods such as petroleum refineries, glass and glass products, industrial chemicals, pottery,china and earthenware, petroleum and coal products, rubber products, other nonmetallic mineral, paper and paper products, professional and scientific equipment, nonferrous metal products, transport equipment, iron and steel, machinery except electrical, textiles, other chemicals (a borderline case) and fabricated metal products. Consumer goods like tobacco, food manufacturing, and food processing also belong to the high concentration group.

The moderate concentration group consists of sub-sectors with concentration ratios ranging from 40 to 69 percent. In 1995, this group included beverages, electrical machinery, metal furniture, wood and cork products, cement, printing and publishing, leather footwear,

furniture except metal, plastic products, and leather and leather products. Only wearing apparel except footwear fell under the low concentration group.

Price cost margins were estimated as a rough measure of profitability. On the average, the manufacturing industry posted a price cost margin of 30 percent in 1988. This increased to 34 percent in 1994 and to 36 percent in 1995. The table shows that in 1995, price cost margins remained high particularly for tobacco (57 percent), other chemicals (46 percent), other nonmetallic minerals (40 percent), food manufacturing (41 percent) and glass and glass products (52 percent). These manufacturing industries were among the sub-sectors with very high degrees of concentration. Even sub-sectors classified under medium and low degrees of concentration have relatively high price cost margins. For instance, moderately concentrated sub-sectors like beverages had a price cost margin of 57 percent in 1995, cement posted a price cost margin of 42 percent while an unconcentrated sub-sector such as wearing apparel registered a price cost margin of 32 percent. A combination of high price cost margins and high concentration ratios tend to suggest that some monopoly rents are being incurred.

Table 10.1: Concentration Ratios and Performance Indicators
Manufacturing Sector: 1988, 1994, and 1995

Sectors	Concentration Ratios			Number of Establishments			Price Cost Margin		
	1988	1994	1995	1988	1994	1995	1988	1994	1995
High									
Petroleum Refineries	100	100	100	4	4	4	0.18	0.22	0.32
Professional and Scientific	100	100	99.97	14	13	20	0.32	0.23	0.24
Tobacco	96.64	99.56	99.41	25	21	22	0.48	0.56	0.57
Nonferrous Metal Products	99.67	99.28	98.57	35	34	40	0.24	0.18	0.24
Glass and Glass Products	96.33	90.58	92.05	35	53	46	0.46	0.50	0.52
Industrial Chemicals	90.14	87.52	84.65	112	171	197	0.37	0.34	0.31
Transport Equipment	80.98	86.20	84.40	230	264	265	0.28	0.23	0.23
Pottery, China and Earthen	92.82	86.05	93.74	59	68	61	0.34	0.34	0.35
Food Processing	79.51	81.37	81.74	915	751	717	0.30	0.30	0.32
Iron and Steel	84.18	80.64	70.55	128	191	201	0.23	0.43	0.24
Machinery except Electrical	63.59	77.47	79.43	556	464	460	0.28	0.32	0.28
Petroleum and Coal Products	81.10	77.00	87.40	16	14	16	0.24	0.14	0.26
Fabricated Metal Products	73.45	74.48	74.32	469	555	550	0.28	0.32	0.28
Other Chemicals	66.37	75.64	69.09	300	288	295	0.40	0.46	0.46
Rubber Products	79.15	73.50	73.66	137	187	181	0.24	0.28	0.37
Other Nonmetallic Mineral	68.92	71.31	74.54	353	304	253	0.34	0.37	0.40
Paper and Paper Products	78.97	71.23	70.40	167	215	206	0.32	0.30	0.29
Miscellaneous Manufacture	70.87	70.62	76.76	342	312	309	0.27	0.23	0.31
Textiles	64.12	64.14	72.37	549	537	508	0.28	0.24	0.30

Food Manufacturing	63.48	69.74	77.92	2003	1879	1798	0.32	0.33	0.41
Moderate									
Beverages	48.19	70.08	63.43	91	86	88	0.31	0.56	0.57
Electrical Machinery	64.80	69.36	63.73	217	271	310	0.21	0.22	0.28
Metal Furniture	80.88	79.49	62.67	36	34	35	0.30	0.10	0.21
Leather and Leather Products	57.70	63.89	64.02	120	84	85	0.17	0.16	0.23
Wood and Cork Products	40.50	55.47	65.35	683	401	354	0.22	0.24	0.23
Cement	45.30	48.30	45.37	17	18	18	0.28	0.37	0.42
Printing and Publishing	42.13	47.26	51.08	636	637	636	0.25	0.28	0.32
Leather Footwear	30.33	41.70	55.00	425	384	373	0.19	0.14	0.20
Furniture except Metal	19.51	40.91	41.64	678	497	439	0.22	0.24	0.25
Plastic Products	49.41	40.75	50.87	300	377	365	0.27	0.29	0.29
Low									
Wearing Apparel except Footwear	34.70	31.69	26.52	1556	1512	1521	0.25	0.13	0.32
Total Manufacturing	70.88	73.63	73.64	11208	10726	10373	0.30	0.34	0.36

Source of basic data: National Statistics Office, 1988 and 1994 Census of Establishments and 1995 Annual Survey of Establishments.

The concentration ratios refer to the ratio of census value added by four largest firms to total in each five-digit PSIC sector. The concentration ratios given above are weighted averages for three-digit PSIC.

The price cost margin (PCM) was estimated as follows: PCM = [(Value of Output - Cost of Raw Materials – Total Compensation)/Value of Output]. The price cost margins given above are weighted averages for three-digit PSIC.

Table 10.2 confirms the positive correlation between concentration and industry profitability for the Philippine manufacturing sector. The table shows a positive and highly significant correlation between profitability and concentration for all three years: 1988, 1994, and 1995.

Table 10.2: Correlations Between Concentration and Industry Profitability

	Price Cost Margin		
	1988	1994	1995
Four-firm Concentration Ratio	0.00306	0.00298	0.00338

Table 10.3 presents results using a conventional regression specification of the concentration-profits relationship including capital intensity. This variable is added to control the result that a positive relationship between concentration and profitability could wrongly reflect the firms' large capital costs per unit of output. Except for 1995, the results show that concentration is highly significant for the Philippine manufacturing industry. The coefficient for capital intensity has the expected positive sign but is significant only for 1995 and for the pooled data. Although it is negative in 1988 (implying that capital-intensive industries performed badly in 1988), this is statistically insignificant.

Table 10.3: Estimates of the Concentration-Profits Relationship

	Dependent Variable: Price Cost Margin
1988	
Constant	0.19008[**]
Concentration Ratio	0.00094[**]
Capital Intensity	-0.01133
R^2	0.025
1994	
Constant	0.17405[**]
Concentration Ratio	0.00098[**]
Capital Intensity	0.01355
R^2	0.030
1995	
Constant	0.24560[**]
Concentration Ratio	0.00050
Capital Intensity	0.02867[*]
R^2	0.024
Pooled Data	
Constant	0.19450[**]
Concentration Ratio	0.00089[**]
Capital Intensity	0.01707[*]
R^2	0.030

[**] Significant at the 1 percent level
[*] Significant at the 5 percent level

The positive correlation/relationship between concentration and profitability in Philippine manufacturing is consistent with both the structuralist school and efficiency hypothesis or Chicago school. According to the former, industrial concentration fosters collusion and hence, monopoly pricing. On the other hand, the efficiency hypothesis points out that superior firms in an industry that make a product or cost breakthrough will gain market share, causing industry concentration to increase. Broadly interpreted, the efficient markets hypothesis states that markets are workably competitive and that the market structure reflects differential efficiency, not strategic behavior. Dominant firms owe their position to superior performance, not to strategic behavior or the history of entry into the industry, and profits are simply the rents that accrue to superior technology (Gilbert as cited in Stigler, 1968 and Demsetz, 1973).

It is important to recognize that firms may achieve a dominant position in a market through methods that are perfectly legitimate, for example, through the adoption of efficient business practices like innovation, adoption of superior production/distribution methods, or simply greater entrepreneurial efforts. In the context of the Philippines, however, one is inclined to believe that the structuralist school is more applicable given the limited R&D and S&T activities particularly the underinvestment in R&D by the private sector. Cororaton (June 2000) noted that the estimated gap in R&D investment is about 0.5778 of GNP or approximately P14 billion in current prices. Underinvestment is prevalent in almost all sectors notably in agriculture and manufacturing.

Domestic and Import Prices: A Comparison

Using Philippine domestic wholesale prices and Hong Kong unit import values, L. De Dios (1998) computed price ratios between domestic and world prices for a sample of 249

commodities covering agriculture and manufacturing. The data sources were the National Statistics Office and Hong Kong Import Trade Statistics for the wholesale domestic prices and world or border prices[7], respectively.

The estimated price ratios indicate t hat after substantial trade reform from the eighties to the early nineties, the manufacturing industry has continued to exhibit significant and widespread price differences between domestic and imported goods. While some reductions in the price ratios of some products were observed between 1988 and 1995, the price differences still remained high even after trade liberalization. For some others, the price differences even widened during the years under review. As De Dios noted, a good number of products had price ratios that exceeded tariffs despite their deregulation. On this basis, it would appear that imports are not providing a sufficient competitive threat to domestic producers. For instance, in 1995, the domestic price of butter and margarine was between 105% to 177% higher than imported counterparts from Hong Kong. The difference between local wholesale prices and Hong Kong import prices for goods such as macaroni was 164%, powdered milk: 82%, ground cocoa: 429%, catsup: 167%, tomato sauce: 117%, dry cell battery: 283%, mattress: 655%, toilet soap: 137%, and laundry soap: 183% (refer to Table11). These commodities were liberalized between 1981 to 1985.

Dutz and Narueput cited three fundamental reasons (which are distinct and mutually exclusive) in explaining the lack of price convergence between domestic and international prices:

➢ Public policy: This includes international trade policy measures such as antidumping duties and multiple effective exchange rates which remain even after trade liberalization and hence, allow price divergences to persist.

➢ Market power: Incumbent firms with market power are able to maintain higher prices by foreclosing entry through such arrangements as sole distributorships and exclusive dealing.

➢ Other causes: Transportation costs, the perishable nature of certain goods, and capital market imperfections.

Table 11: Price Gaps, Concentration Levels and Price-cost Margins in Philippine Manufacturing, 1995

Commodity	Status	Price difference (in %)	Four-firm concentration level (in %)	Price cost margin (in %)
Meat Processing			79.11	32
Bacon	L82 R83 L92 R93 L95	161		
Ham	L82 R83 L92 R93 L95	130		
Frankfurters	L81 R84 L92 R93 L95	146		

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[7] The wholesale domestic price is defined as the sum of the producer or import price, wholesale trade margin, tax and distribution costs of the wholesaler. Hong Kong import unit values were chosen because of the large magnitude and wide range of goods that consistently anter that port. While there were a number of commodities where there was a lack of one-to-one correspondence (mainly because of the higher level of aggregation in the Hong Kong data compared to the NSO data), majority of the Philippine commodities were directly comparable with Hong Kong data (De Dios L., 1998).

Vienna sausage	L81 R84 L92 R93 L95	244		
Powdered,condensed, evaporated milk			100.0	49
Powdered milk	L85	82		
Butter and cheese			100.0	16
Butter	L82 R84 L85	105		
Fruits & vegetable sauces			65.83	19
Catsup	L82	167		
Tomato sauce	L82	117		
Biscuits			82.57	40
Butter cookies	L81	63		
Refined coconut & vegetable oil			74.57	13
Margarine	L82	177		
Rice noodles			100.0	9
Macaroni	L81	164		
Bihon				
Sotanghon	L81			
Chocolate bars, cocoa products			85.23	26
Ground cocoa	L81	429		
Cocoa butter	L81	724		
Coffee roasting & processing			63.83	21
Instant coffee		76		
Petroleum Refineries			100.0	32
Gasoline	R	91		
Kerosene	R	71		
Diesel oil	R	78		
Inorganic salts & compounds			99.80	32
Sodium hydroxide		1647		
Caustic soda		171		
Organic acids & acid compounds			86.62	35
Glycerine		149		
Acetic acid		171		
Paints			62.15	20
Primer paint		44		
Drugs &medicines			45.04	48
Antibiotic	L92	350		
Penicillin	Restricted	1406		
Vitamins		1168		
Ascorbic acid		1174		
Thiamine hydrochloride		14560		
Soaps & synthetic detergents			98.50	42
Toilet soap	L82	137		
Laundry soap	L82	183		
Detergent	L82	41		
Matches			100.0	58
Matches	L82	227		
Vitreous china plumbing,			100.0	52

fittings & fixtures				
Porcelain lavatory	L88	141		
Tires & tubes			93.64	43
Rubber tire, car	L86	39		
Pesticides, insecticides			73.71	31
Insecticide	Restricted	888		
Box bed & mattresses			91.88	23
Mattress	L81	655		
Plastic industrial supplies			46.01	22
Plastic sheet		427		
Cement			45.37	44
Cement	L89	110		
Paper mills			76.33	35
Manila paper		655		
Wax paper		1495		
Onion skin	L87	155		
Flat glass			99.74	56
Sheet window glass	L87	830		
Glass tabletop		701		
Rolling mills			70.06	25
Steel bars	L86	82		
Cutlery			96.15	32
Scissors		445		
Farm tractors			100.0	32
Tractor		3456		
Pumps, compressors, & blowers			94.75	62
Aircon	L82 R82 L92	169		
Radio & tv receiving sets			83.58	27
Radio phono		71		
Electrical lamps & fluorescent tubes			73.27	37
Fluorescent tube	L82 R82 L92	650		
Electric fan, vacuum cleaner, etc			93.40	31
Electric fan	L82 R82 L92	222		
Primary cells & batteries			99.90	33
Dry cell battery	L82	283		
Electrical accumulators			97.28	29
Storage battery	L92	7646		
Watches & clocks			100.0	25
Watch		2403		
Wall clock		681		
Manufacture of umbrellas & cane			100.0	27
Umbrella	L86	195		

Notes: L- Liberalized; R - Restricted

Table 11 shows a wide range of highly concentrated products with high price differences and high price-cost margins particularly in the following sectors: Pumps, compressors, & blowers , flat glass, tires and tubes, vitreous china plumbing, fittings, and fixtures, matches, soaps and synthetic detergents, biscuits, and powdered, condensed, and evaporated milk. Drugs and medicines and cement both have wide price gaps and high price-

cost margins. As most of the commodities were only liberalized in the 1990s and as a great number of commodities were also regulated and liberalized more than once making their import values become erratic, it would be useful to extend the calculations reflecting more recent data in order to yield more meaningful analysis.

The discussions above should not lead to the inference that trade liberalization has not had a significant impact on domestic prices. What the findings suggest is that important barriers to price equalization remain even after trade liberalization. Trade reforms are necessary for the growth of a free market, but, by themselves, they do not guarantee effective competition.

One important issue that confronts policy makers is the extent to which barriers to market access and competition might prevent domestic and international prices from converging. To the extent that this is true, manufacturers with market power are capturing the differential between international and domestic prices that were created by the earlier protectionist trade policies. Consumers are thus unable to reap the benefits that they expected from trade liberalization as these were instead captured by powerful business interests.

To make inferences about market power and determine whether the lack of price convergence is due to anticompetitive behaviour or simply by higher costs in a competitive market, micro-level studies and additional price analyses are necessary to supplement the concentration ratios, price-cost margins, and price differentials estimated for the manufacturing industry. In the next section, a case study on cement manufacturing is presented to evaluate the behavior of a sector after undergoing substantial trade liberalization and price deregulation in the early nineties and in the succeeding years.

XI.   Cartel and Collusion in the Philippine Cement Industry : A Case Study

> *Businessmen's meetings, even for merriment and diversion usually end up in connivance to restrict competition. It is impossible indeed to prevent such meetings, by any law which either could be executed, or would be consistent with liberty and justice.   -- Adam Smith*

F.   Cartels and Collusion and Oligopoly Theory

Collusion describes a type of conduct or form of behavior where firms agree to coordinate their actions. Instead of the firms competing against each other in one form or another they may be able to collude to avoid competing with each other. In this case, the firms can jointly agree to set prices and quantities that maximize the sum of their profits (Varian).

When firms get together and attempt to fix prices or levels of outputs, rig bids in auctions or procurements and divide markets by allocating customers, territories, relevant products or supplies in order to maximize total industry profits, they are known as a cartel. Cartels and collusion are anti-competition, they create market power, suppress rival and consumer activities, and their effects are worse than monopolies and bad mergers (Willig, Lecture on Competition Policy, May 2000).

In a cartel, there is always a temptation to produce more than is agreed and hence, make higher profits assuming that the rest of the industry will produce at a constant level and will not respond. To be successful, a cartel must have a punishment strategy to police members' behavior. For example, a price war to wipe out the gains from the deviation. This requires that firms must be able to keep track of the prices and production levels of the other firms in the cartel (Varian).

Collusion is a cooperative game. It involves two elements: (1) a process of communication/discussion and (2) an exchange of information with the aim of reaching an agreement and the imposition of punishment in case of deviations. It is important to differentiate between hard and soft cartels. Hard-core cartels or explicit collusion refers to explicit agreements to fix prices or share markets between producers and sellers of substitute products. Soft cartels or tacit collusion refers to collusive agreements that are merely implicit.

In the US, collusion is in most instances per se illegal. In the European Community, hard core cartel agreements are prohibited. In the UK, the policy is directed more at evaluating the results of collusive behavior. Whether firms 'really' colluded is not a central issue and what matters is the appraisal of the outcomes of their behavior from the point of view of economic efficiency.

Oligopoly theory tells us that there are several ways in which firms behave in an oligopolistic environment. The leading models in the literature are summarized in Rees (Oxford Review of Economic Policy, Vol.9, No.2):

Cournot Model: firms independently choose outputs on the assumption that their rivals make no response to their choices and market equilibrium is achieved through a sequence of alternating output choices which converges over time.

Stackelberg Model: a leader makes a choice of output, the other firms act as followers and make their profit-maximizing response to this output. The leader takes account of these responses in choosing its output and is able t o do better than it would under Cournot reactions.

Kinked Demand Curve Model: each firm believes that an increase in its output (reduction in its price) will be matched by its rivals, while a reduction in output (increase in price) will not be followed. This creates a kink in the firm's perceived demand curve at its current price-output pair which then tends to remain the same despite changes in marginal cost, because of a discontinuity in the firm's marginal revenue at the kink.

Bertrand Model: again in the traditional story firms independently choose prices, on the assumption that their rivals make no response to their choices. When firms produce identical outputs and have identical constant marginal costs equilibrium price ends up equal to this common cost.

Edgeworth Model: firms choose prices as in the Bertrand model, with identical constant marginal costs, but with fixed output capacities. There is a range of possible types of outcome and the possibility of price cycles. There is a range of prices the upper and lower limits of which are determined by demand, cost, and capacity parameters. As firms set prices alternately over consecutive periods, price falls by small steps from the upper limit of the

interval until it reaches the lower limit and then jumps back to the upper limit and the cycle begins again.

All these oligopoly models are examples of non-cooperative games. In general, collusion results in the smallest industry output and the highest price. Betrand equilibrium, the competitive equilibrium, gives the highest output and the lowest price. The other models provide results that are in between these two extremes.

Many theorists see the above models as giving analytical precision to the idea of tacit collusion (Rees). This would not involve explicit agreement but simply the unspoken acceptance by the firms that it is in their best interests to produce the monopoly output on the understanding that failure to do so would provoke a price war. Implicit coordination may be achieved simply through market interactions without any communication or negotiation between firms. There would be no evidence of firms' having met or having discussed the coordination of market behavior. The only evidence that will be available relates to firms' market behavior. As in the case of an explicit enforcement mechanism, the operation of implicit mechanisms will require information. To be sustainable, information on each other's costs, outputs, prices, and discounts are necessary. The greater the number of firms and the more product heterogeneity, the greater these information requirements expand.

In the real world, there are many facilitating devices that have been developed to help firms achieve successful tacit collusion. These include:

➢ Trade associations: In many industries, associations are usually organized to handle public relations, organize conventions, trade fairs, etc. However, they may also act as facilitating devices as in collecting and disseminating information on costs, outputs, prices, and policing both tacit and explicit agreements:

➢ Price leadership: In this practice, the dominant firm first announces price changes and the other firms follow within a short period of time. It is also possible for a non-dominant firm which is considered the best at judging market conditions to play this role. This practice of price leadership is a way of addressing the problem of choosing one price agreement in the set of possible agreements. If the leader is good in selecting mutually acceptable prices, the agreement can be entirely tacit.

➢ Basing point price: this is a pricing system where transport costs are high relative to production costs and buyers and sellers are spatially dispersed. It is common in industries like steel and cement. Delivered prices are computed based on base prices and transport charges. This arrangement often result in delivered prices to any buyer that are always uniform across sellers and there is no price competition. Sellers must exchange information on base prices and transport charges, but no explicit agreement to collude on prices is made.

➢ There are also many opportunities for company officials to make their views known to each other on the state of the market and the direction prices should take, for example, in newspaper interviews, articles in trade publications, or in speeches.

The prospect that firms may rely on tacit collusion or implicit coordination enforcement mechanisms, although imperfect, to exercise collective market power raises an important issue for competition policy.

G.   An Overview of the Philippine Cement Industry

Cement, like other homogeneous products such as sugar and flour, is often cited as a market likely to have a cartel. In the Philippines, the industry was engaged in collusive behavior facilitated by the firms' market sharing agreements. These were accepted practices in the past as they were sanctioned by government regulations. The cement industry developed under heavy government protection and promotion through the imposition of high tariffs and import restrictions and the granting of incentives under the Board of Investment's (BOI) rehabilitation, modernization and rationalization program. It was also subject to government regulation through the Philippine Cement Industry Authority (PCIA) which was created in 1973 to regulate entry in the industry, allocate supply, and control prices as well as cement exports.

Many of the cement firms had direct government participation through guarantees, loans, and equity. The economic slump in the early 1970s resulted in large losses and chronic oversupply situation which prompted cement firms to push for government regulation of the industry. They believed that by government regulation, the industry could prevent cutthroat competition. As the government also had financial interests in the sector, it immediately responded by creating the PCIA. At about the same time, the industry association which is currently known as Philippine Cement Manufacturers Corporation (Philcemcor) was incorporated to help the PCIA in implementing its duties and responsibilities. The PCIA and the Philcemcor worked closely together in regulating the industry with PCIA delegating the setting of production quotas to Philcemcor.

Collusion took place through the firms' informal agreement to set production quotas and to assign geographic markets among themselves. Philcemcor held regular monthly meetings to set production quotas. It also arranged the geographical division of the markets that restricted Luzon plants to sell only in the Luzon area and the Visayas/Mindanao plants to confine their sales in the area (SGV Consulting, 1992). This practice divided the country into regional markets served by a dominant player, thus, eliminating competition from taking place in the industry.

In 1987, the PCIA was abolished, but the price control function was transferred to the Department of Trade and Industry and the Board of Investments. The price control was momentarily lifted in February 1989 and reimposed in July 1989. Prices were finally deregulated in November 1991.

The tariff on cement was reduced from 50 percent in 1979 to 40 percent in 1988 and it was further reduced to 20 percent in 1989. Import restrictions on cement were lifted effective March 1989. From January 1990 to mid-1991, the tariffs on portland cement and clinker were suspended to address the problem of cement shortage following the expansion of construction activities in the country. In July 1991, the 20 percent tariff on cement imports was restored. This was reduced to five percent in 1993-94 and to three percent in 1995-1997. The rate, however, was increased to 10 percent during 1997-1998. In 1999, this was reduced to seven percent and currently, its rate stands at five percent.

Simultaneous with the abolition of the PCIA in 1987, the Development Bank of the Philippines transferred cement industry financial assets to the Asset Privatization Trust (APT). Most of the firms negotiated with the APT the settlement of their debts under the

"direct debt buy out" scheme. APT also bidded out all the cement companies foreclosed by DBP (Onada Engineering and Consulting Co., 1991).

The past three years witnessed the acquisitions of local cement companies by four large foreign firms: Lafarge, Holderbank, Cemex, and Blue Circle. These firms (together with Heidelberger) account for about 60 percent of the annual 100 million MT of the global cement trade. Following the entry of foreign players, some sectors raised concerns on their possible domination of the market and the creation of a cartel.

Cement prices have been rising continuously starting in May 1999, in contrast to the downward trend exhibited during the period February 1997 to April 1999. Industry analysts are questioning the price increases in the presence of excess supply and weak demand due to the slowdown in construction activity in the country. These price increases immediately following the entry of foreign players prompted them to believe that a cement cartel is at work. Philcemcor defended the companies by saying that the price increases were inevitable due to the high production costs and finance charges. The financial crisis struck at a time when cement companies were expanding in anticipation of increased economic growth. This resulted in dramatic increases in their foreign denominated loans and high interest rates on local loans. Congress immediately initiated investigations on the re-emergence of a cement cartel. The DTI also conducted preliminary investigation on the possible collusion among members of the cartel to keep cement prices above normal levels.

Philcemcor was quick in pointing out the gains to be reaped by the industry from foreign participation. These include the advanced technology that they would bring in to help make the industry more modern and efficient and more competitive internationally, export markets for local companies, financial resources needed by the capital-intensive industry, and high industry standards in terms of workforce training and safety as well as environmental protection.

More than ten years have passed since the deregulation and liberalization of the industry. Has the liberalization and deregulation of the industry curbed the industry's collusive practices? Is trade liberalization and deregulation sufficient to foster effective competition in an industry previously engaged in collusion which was sanctioned by government regulation? Has the recent wave of foreign acquisitions of local cement firms spurred competition in the industry?

H.   Competition Analysis

1.   Market Definition

A market has two components, its product and its geographic reach. The product market describes the good or service that is bought and sold while the geographic market describes the location of the producers or sellers of the product.

Product Market

The cement industry covers the manufacture of hydraulic cements including portland, aluminous slag and superphosphate, whether or not in the form of clinker (1994 Philippine Standard Industrial Classification). Cement is a superior bonding agent used as a raw material

in concrete construction. Its main components are limestone, clayey materials, and ferrous materials which are processed into clinker. The latter is ground and mixed with gypsum to produce cement.

Cement manufacturing is basically capital intensive. Capital costs accounted for about 20 percent of total manufacturing costs (SGV Consulting, 1992). The industry is also a heavy user of energy with energy costs ranging from 30 to 43 percent of manufacturing costs depending on the type of manufacturing process applied.

There are currently three types of cement produced in the country:

Ordinary Portland cement (Type 1): regarded as the most important type of cement and is manufactured from limestone, clayey materials, siliceous materials, ferrous materials, and gypsum. It is hydraulic and cementitious in the presence of water. Portland (Type 1) cement accounts for the bulk of total demand in the industry.

Portland Pozzolan Cement (Type P): a type of blended cement composed of a finely ground mixture of 70 to 80 per cent clinker and 20 to 30 per cent pozzolan materials.

Portland-Pozzolan Cement (Type 1 -P): a cement product with a shorter curing period than Type P Portland pozzolan and compares favorably with ordinary portland cement in terms of compressive strength and setting time.

Industry Players

While there are many individual cement firms operating in the industry, in terms of ownership, only a few groups control the industry's operations. In the early 1990s, there were only three ownership groupings in the industry with the Phinma group controlling six plants accounting for 42 percent of the industry's rated capacity. The Zobel-Araneta-Montinola group accounted for 18 percent of the industry's rated capacity while the Alcantara group had 14 percent. The rest of the firms were independent from the three groups and together comprised roughly 27 percent of industry capacity.

Following the 1997 Asian financial crisis which hit the construction sector badly, an industry reorganization started to unfold as foreign cement companies entered and forged partnerships with local firms. The peso depreciation boosted the debt costs of cement firms with foreign-denominated loans and as the recession caused the construction industry to contract, foreign firms were able to buy into the local cement industry. Most local firms have taken in foreign companies as partners in order to generate fresh capital, strengthen their balance sheet, and improve their technology to bring operations at par with world standards.

Table 12 : Industry Ownership Structure Prior to Asian Crisis

Geographic Market	Phinma group	Zobel-Araneta-Montinola group	Alcantara group	Independent firms
Luzon North	Bacnotan			Northern
NCR	Solid Hi-Cement	FR Titan		Republic Continental

	Rizal Central			
Luzon South		Fortune		
Visayas				Apo
Mindanao	Davao Union		Alsons Iligan	Pacific Mindanao

In 1997, Central merged with Bacnotan reducing the total number of local cement firms to nineteen. During the same year, Cemex S.A. of Mexico (the world's third largest cement maker) bought Rizal and Solid. In 1999, it acquired Apo Cement from JG Summit Holdings of taipan John Gokongwei Jr.

In 1998, the French firm Lafarge (the world's second largest cement manufacturer) bought into Southeast Asian Cement, Republic Cement, and Continental Cement while UK-based Blue Circle Ltd. also bought into Republic Cement and Fortune Cement (which are partly owned by retail magnate Henry Sy Sr) as well as in Mindanao Portland and Iligan. Heidelberger bought into Limay while Swiss cement manufacturer Holderbank (the world's largest cement maker) bought into Bacnotan Cement, Davao Union Cement, and Hi-Cement in mid-1998 as well as into Alsons and Iligan in early 1999.

With the presence of the world's largest cement companies, the industry, which used to be dominated by one big group and several family-owned companies, is now divided into five groups with cross-ownership: Phinma, Holderbank, Lafarge, Blue Circle, and Cemex. Four firms remain independent and have not linked up with a foreign partner: Northern (Eduardo Cojuangco), Grand (Benedictos), Pacific, and Titan (Aranetas). Industry restructuring continues as the market remains sluggish due to the decline in construction activities. Currently, industry restructuring has taken the form of mergers and consolidations with the objective of commercial and operational efficiency improvements.

Early this year, the Securities and Exchange Commission approved the merger of Bacnotan Cement, Davao Union Cement, and Hi-Cement. Phinma and Holderbank control the umbrella company known as Union Cement Corporation. The latter has a total capacity of 5.7 million metric tons and is expected to be the country's biggest cement company.

Industry analysts also expect Holderbank to merge Union Cement with Alsons Cement where it owns a 50 percent stake.

Towards the end of 1999, Blue Circle announced its plan to consolidate the operations and activities of Fortune Cement, Republic Cement, Zeus Holdings, and Iligan Cement. Blue Circle will own 64.5 percent of the merged entity. The other partners are the SM Group of Henry Sy and the Montinola family. The combined entity will be the second largest cement company (with a market share of almost 20 percent) in the country with full national coverage and a total clinker capacity of 4.4 million tons. The integration is expected to incur cost savings amounting to P750 million by 2002.

Table 13: Ownership Structure After Asian Crisis

Geographic Market	Phinma Group	Holderbank	Lafarge	Blue Circle	Cemex	Others
Luzon North Bacnotan	60%	40%				

Northern Limay							Independent Heidelberger
A. NCR Solid						100%	
Hi-Cement	60%	40%					
Republic			13%		54%		
FR			69%				
Rizal						100%	
Continental			100%				
Titan							Independent
Luzon South Fortune					20%		
B. Visayas Lloyds			69%				
Grand							Independent
Apo						100%	
C. Mindanao Davao	60%	40%					
Union							
Alsons		50%					
Iligan		37%					
Pacific							Independent
Mindanao					73%		

Geographic Market

Cement has a limited shelf life (three to six months) and is characterized by high transport and handling costs. Cement manufacturing in the Philippines is basically resource-based with cement plants located in or near limestone quarry areas. Cement firms use exclusive distributors to sell their products. Cement is distributed by land within Luzon and by both land and water within Visayas and Mindanao.

There are two major natural markets in the country: Luzon (except Bicol) and the South (Bicol with Visayas and Mindanao). A more detailed geographic market breakdown divides the country into five large regional groups: Northern and Central Luzon, National Capital Region, Southern Luzon, Visayas, and Mindanao.

2. Market Shares

Table 14 presents the five geographic markets in which the firms manufacture and sell as well as the individual market shares of the cement firms based on their production data. In the Northern and Central Luzon area, there are three firms operating namely Bacnotan, Northern, and Limay. The first two cement companies dominate the market, although Limay which entered the market only in 1997 registered increasing shares between 1997 and 1999.

Table 14. Market Shares

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Luzon North										
Bacnotan	43.80	36.48	41.77	45.37	48.89	55.34	56.55	55.83	47.67	37.34

Northern	56.20	63.52	58.23	54.63	51.11	44.66	43.45	29.21	39.54	45.53
Limay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.96	12.78	17.13
Sub-total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Nat'l Capital Region										
Solid	23.03	23.59	27.10	29.66	28.75	30.06	27.88	23.07	22.53	22.00
Hi-Cement	15.06	15.07	18.01	21.35	21.07	19.49	22.57	31.86	33.00	29.65
Republic	13.43	12.94	14.03	12.03	13.53	13.11	12.81	15.44	17.01	19.19
FR	17.07	16.29	10.10	11.01	11.02	10.24	8.22	8.33	14.55	20.59
Rizal	15.11	15.86	12.85	9.41	10.23	9.68	9.20	7.22	3.20	0.33
Central	7.63	7.14	6.86	6.32	6.14	5.81	5.41	Merged w/ Bacnotan		0.00
Continental	4.23	4.86	6.09	5.59	5.02	6.76	7.21	8.20	7.00	7.47
Titan	4.44	4.25	4.97	4.62	4.25	4.87	6.69	5.89	2.70	0.77
Sub-total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
South										
Fortune	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Visayas										
Lloyds			25.39	61.16	45.75	39.51	37.13	37.66	14.83	18.86
Grand					41.91	47.41	49.16	50.19	28.18	19.36
Apo			74.61	38.84	12.34	13.08	13.71	12.15	56.99	61.78
Sub-total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Mindanao										
Davao Union	37.58	37.38	40.95	37.60	35.65	34.07	47.17	45.18	44.78	33.08
Alsons	26.30	24.92	20.19	25.00	27.46	26.23	21.19	26.54	22.25	38.81
Iligan	22.33	23.58	21.30	24.56	24.65	23.36	19.02	16.76	19.61	11.90
Pacific	5.45	5.81	10.48	8.01	7.68	9.19	7.01	6.07	4.65	7.26
Mindanao	8.35	8.31	7.08	4.83	4.56	7.15	5.61	5.45	8.71	8.95
Sub-total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Philcemcor

The National Capital Region has the most number of competing firms. There used to be eight firms before Central merged with Bacnotan in 1997. Hi-Cement, Solid, Republic, and FR are currently the leaders in the NCR market. In Southern Luzon, there is only one firm, Fortune Cement.

In the Visayas, there used to be only one firm, Apo Cement, up to 1991. Lloyds entered the market in 1992 followed by Grand in 1994. The incumbent, Apo Cement, lost substantial market share to the new entrants, but gained back its position in the last two years 1998-1999.

In Mindanao, five firms are operating with the bulk of the market controlled by Davao Union, Alsons, and Iligan.

3.   Concentration Measures

One needs to be careful in defining the cement market. Product market definition is relatively easy as cement is a homogeneous good. Geographic market definition is very important as the firms' individual shares would change depending on the extent of the

geographic market defined. Correctly defining the product and geographic markets is necessary in order to correctly assess the level of concentration in the industry. As earlier indicated (refer back to Table 9), the cement industry was only moderately concentrated, although a more detailed examination which takes the geographic market definition into account would reveal otherwise because the industry is a highly concentrated one.

Table 15. Four-Firm Concentration (CR4) Levels and HHI

CR4	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
N.Luzon	100	100	100	100	100	100	100	100	100	100	100	100	100
NCR	100	84	86	91	81	72	74	74	73	81	87	88	99
S Luzon	100	100	100	100	100	100	100	100	100	100	100	100	100
Visayas	100	100	100	100	100	100	100	100	100	100	100	100	100
Mindanao	100	93	94	94	94	92	96	96	93	94	100	95	93
HHI	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
N.Luzon	5370	5193	5169	5081	5360	5123	5115	5001	5085	5087	4293	3962	3768
NCR	2676	1578	1623	1547	1523	1649	1791	1774	1755	1727	2008	2213	2163
S Luzon	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	4353
Visayas	10000	10000	10000	10000	10000	10000	5118	4312	3998	3977	4086	4318	3587
Mindanao	3199	2653	2634	2701	2689	2755	2794	2740	2589	3120	3174	3011	2617

After the deregulation of cement prices, removal of import restrictions as well as substantial tariff reductions, the estimates show that in all five geographic markets, the cement industry has remained highly concentrated for the thirteen-year period 1987-1999. Both the four-firm concentration ratios as well as the HHI estimates confirm this finding. Except in NCR, the four-firm concentration ratios have remained high and hardly changed in the last thirteen years. In the case of NCR, its concentration ratio rose remained high and fluctuated between 1987 to 1999 with slight movements downward in 1992 and 1995 and steady increases thereafter. These high levels of concentration should be a source of concern given the cartel image of the cement industry.

Going by the US guidelines (where 1000 and below is considered unconcentrated, between 1000 to 1800 is moderately concentrated, and above 1800 is highly concentrated), the HHI estimates indicate that between 1988 to 1996, NCR was only moderately concentrated and only started to be highly concentrated in 1997. The HHI estimates indicate that the concentration levels in Northern Luzon and the Visayas are declining but still remained high. There was not change in Southern Luzon, which was controlled by only one firm as indicated by its HHI of 10000 (the maximum in the range of HHI outcomes), except in 1999. In Mindanao, the concentration level stayed high and was almost constant between 1988 and 1999. Between 1988 to 1995, the concentration levels remained roughly at the same level, a peak of 3174 was reached in 1997, although this has been gradually declining in the last two years.

D.   Anticompetitive Behavior in the Philippine Cement Industry

Despite substantial market reforms like price deregulation and trade liberalization in the Philippine cement industry, geographic market sharing agreements, which have been accepted practice in the past, continue to limit competition in the industry. As earlier shown, the industry has remained highly concentrated. Market sharing along geographical lines facilitates collusion and enhances the market power of major participants.

There is consensus among economists and legal professionals that agreements to fix prices, to reduce output, or to allocate customers or territories are anti-competitive. In an interview with one of its officials, Philcemcor denied the existence of cartel and collusion in

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Box 2: Cases of Cement Cartels: Other Countries'Experience

Case 1: Slovak Republic

In the Slovak Republic, the Antimonopoly Office (AMO) successfully prosecuted a cement cartel which was found engaging in unlawful agreements. Starting in 1992, the AMO had been receiving complaints from cement users alleging illegal practices between cement producers. The AMO made a breakthrough after an investigator found a letter from an official of the Cement Association of the Slovak Republic suggesting a nationwide division of markets.

This prompted the AMO to collect data on prices, production, exports, and inventories of the domestic cement producers. In their analysis of the pattern of price changes, they could not explain the observed trend objectively. This gave rise to strong suspicions that cement prices were artificially set. The AMO started interviewing witnesses at the offices of the cement association. Their interviews confirmed their suspicions that indeed cement producers entered into agreements restricting competition for at least two years. The cement producers agreed to a regular exchange of basic economic data about their firms (output, costs, exports, inventories, profits, number of employees, and average wages and salaries). They reported this information monthly to a consulting firm, which compiled and distributed it to the producers.

The consulting firm also prepared documents establishing a geographic division of markets among the producers and suggesting production quotas for each producer. One of the documents contained the following: "The particular region shall be supplied exclusively by the producer located therein. If there is no producer in a region, a principal supplier shall be designated."

In 1994, the AMO issued an order prohibiting all cement producers from engaging in market division, setting sales quotas or exchanging information that could facilitate the coordination of such illegal agreements. The office imposed fines totaling SK19.96 million (US$0.7 million) on the entrepreneurs who had participated in the agreements. The firms appealed the decision to the Supreme Court of the Slovak Republic which upheld the same.

Case 2: European Community

In the European Community, the European Commission found 42 cement producers throughout Europe to have prevented parallel imports, to have systematically exchanges detailed information and to have occasionally fixed prices. The Commission relied mostly on material evidence of coordination between firms as it imposed fines ranging from 100,000 to 32 million ECUs.

Case 3: Norway

Steen and Sorgard (1996) showed that the Norwegian cement market was characterized by semicollusion where firms competed on capacities and colluded on prices. Their results indicated that the rapid increase in capacity and thereby exports in the period 1956 to 1967 – the late phase of the price cartel could be best explained by the market sharing agreement in which each firm overinvested in capacity to receive a large quota in the domestic market.

Sources: World Bank–OECD, A Framework for the Design and Implementation of Competition Law and Policy, 1998.
European Competition Policy and Agreements Between Firms, Chapter 3.
Steen, F. and L. Sorgard, "A Model of Semicollusion in the Norwegian Cement Market", 1996.

the industry. The geographic market arrangement prevailing in the industry is not anti-competitive and defended it by saying that "this is legitimate, good business strategy for the industry, this was devised in order to avoid the high cost of transportation inherent in the industry".

It is very difficult to find material evidence of coordination such as a written document which could be described as agreement on the cement industry's market sharing. As such, the analysis here would focus on industry characteristics and environment that make it conducive for firms to coordinate their actions. The analysis would also look at associated firm behavior and practices that are indicative of a common policy being pursued by the industry.

Cement is a homogeneous product and is often regarded as an industry likely to engage in collusion. Box 2 contains cement cartel cases in the Slovak Republic, an economy in transition, the European Community, and in Norway. In the Philippines, there are relatively few firms in the industry which makes industry coordination easier. The industry has a very active association, the Philcemcor, that aggregates industry statistics and may facilitate the exchange of individual price and quantity between competitors. The history of coordination in the industry is also a very significant factor to establish the presumption that the firms are not acting on their own and coordination still takes place as firms consciously try to support implicit coordination.

Table 16 : Cement Imports (in 40 kg bags)

Year	Bagged	Bulk	Total Imports	Total Consumption	As Percentage of Total Consumption
1990	23097831	-	23097831	183722831	12.57
1991	250000	-	250000	173252916	0.14
1992	13769275	3271400	17040675	182149782	9.36
1993	-	-	-	200081411	-
1994	241723	-	241723	240152950	0.10
1995	5104175	6906250	12010425	277237624	4.33
1996	10885250	6105050	16990300	323821577	5.25
1997	8794475	-	8794475	372209958	2.36
1998	1821775	2682500	4504275	322362183	1.40
1999	-	11860750	11860750	308594848	3.84

Source: PHILCEMCOR

Potential competition from imports is important as a mechanism to control market power. In the case of cement, however, this is of little practical value because of the substantial costs of entry. Cement is a type of high weight-to-value product with high transport and handling costs and as such, cement is often classified as a non-tradable good. Cement can be imported in bulk, although this will entail a bulk handling facility which is quite expensive. For instance, a 300,000 MT silo will cost around P500 million in investment. On the other hand, shipping cement in bags will entail extra handling costs which can easily increase the price. These factors limit the pro-competitive effects of imports on the industry. Table 16 presents cement imports from 1990 to 1999. Except for the years 1990 and 1992, imports constituted a small portion of total consumption. Foreign firms may have found it more profitable to become parties to the domestic anti-competitive arrangements rather than to compete via imports.

Figure 1 presents the pricing behavior of firms in the industry over the last seven years from January 1993 to May 2000. In general, the demand for cement is seasonal, it peaks during the dry months and falls thereafter. As is evident from the figure, there is a fairly stable pattern in the movement of average ex-plant prices between 1993 to 1996. Chaotic movements in the average ex-plant prices started to be felt in April 1997, way ahead of the Asian financial crisis. During this time, the demand for cement was still rising with growth estimated at about 14 percent. Average ex-plant prices declined steadily from P104 in March 1997 to P 88 in September of the same year. While it slightly moved up to P90 in October to November, it again fell to P87 by the end of the year.

Figure 1: Average Ex-Plant Prices

The same declining trend was observed during the whole period of 1998. It only stopped after Phinma, the leader in the industry, announced that it would no longer engage in any price reduction. As expected, everybody in the industry followed. Cement prices then began to go up consistently from January 1999 to May 2000. This continued even with the entry of imports (sold P5-10 cheaper than local cement) from Taiwan and Japan which started to build up in March 1999.

The industry strongly resisted the entry of cheaper imports. Philcemcor immediately filed a dumping suit against Taiwan and Japan. According to the industry, "imports have cornered nine percent of the market last year (1999) and this is likely to double by the end of 2000 if the government fails to address the industry's dumping concerns". The local cement companies were asking the government for more stringent measures to regulate the entry of cement imports which are allegedly sold at dumped prices. Alsons and several o ther domestic firms are planning to divert all their cement exports to Taiwan in retaliation to the alleged dumping. Alsons said that it would sell its cement at significantly lower price than the prevailing domestic price in Taiwan to send a message that Philippine cement companies could play their game. Note that as import tariffs are liberalized, the pressure on governments to invoke instruments like anti-dumping and countervailing duties (measures that limit import competition) increases.

Meanwhile, the Philippine Constructors Association (PCA) warned that government imposition of anti dumping measures would translate to further increases in the prices of local

cement. The PCA estimated that this measure would increase domestic ex-plant prices to as high as P130 to P140 per bag and retail prices to about P150 to P170 per bag. The PCA together with other construction groups, the National Confederation of Contractors Associations of the Philippines (NACCAP) and the Association of Concrete and Aggregate Producers of the Philippines (ACAPP) have strongly opposed the "unwarranted and concerted increase of cement prices " by the domestic cement industry.[8] The groups said that the abrupt price increases in March 2000 were not related to any major production cost or market forces but are meant to recoup past investment losses".[9]

Table 17 presents the percentage changes in the monthly average ex-plant prices from February to May 2000. The table shows the simultaneous price increases among the firms during these months. The variability in ex-plant prices among the firms within each geographic market in the industry is very small as indicated by the standard deviation figures. In February and April 2000, the standard deviation was 1.15 in Northern Luzon, 1.04 and 1.1 respectively in NCR, and 1.1 in Mindanao. In May, it was 1.59 in the Visayas, 1.53 in NCR, and 1.34 in Mindanao.

Table 17: Percentage Changes in Average Ex-Plant Prices

	February	March	April	May
Luzon North				
Northern	-	7.29	-	-
Bacnotan	7.14	-	2.86	-
Limay	4.08	2.94	4.76	-
Average Price (in P)	101.00	104.33	107.00	107.00
Standard Deviation	1.15	4.58	1.15	3.61
NCR				
Hi-Cement	8.25	-	2.86	-
Continental	1.04	8.23	1.90	-
Republic	-	6.11	-	2.88
FR(Pasig)	-	8.14	0.02	-
FR(Teresa)	(0.26)	7.20	1.92	-
Solid	-	8.08	0.93	-
Average Price (in P)	99.17	105.33	107.00	107.5
Standard Deviation	1.04	2.94	1.1	1.53
Luzon South				
Fortune	-	-	8.75	-
Visayas				
Lloyds	-	9.59	-	1.31
Grand	-	9.59	-	-
Apo	-	11.43	1.59	-
Average Price (in P)	104.50	115.17	115.17	115.67
Standard Deviation	0.43	0.43	1.59	1.59
Mindanao				
Mindanao	2.04	7.00	-	1.59
Davao Union	-	8.25	1.90	-
Alsons	2.04	7.00	-	-
Iligan	2.04	7.00	-	-

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[8] Business World, "Constructors warn cement prices may hit P140 per bag", March 30, 2000.

[9] Manila Bulletin, "Construction industry groups object to cement price increase", March 30, 2000.

Pacific	3.00	4.85	1.85	-
Average Price (in P)	100.00	106.80	107.60	107.60
Standard Deviation	1.10	2.12	1.10	1.34

Source of basic data: Philcemcor

There is also not much variation in the average prices across the three major geographic markets in the country. In February 2000, the average price in Northern Luzon was P101 per bag, P99.17 in NCR, and P100 in Mindanao. The average price of P104.50 in the Visayas is slightly different. In March, the average price in Northern Luzon was P104.33, P105.33 in NCR, P106.80 in Mindanao, and P115.17 in the Visayas. In April and May, the average price in Northern Luzon was P107, P107 and P107.50, respectively in NCR, P107.60 in Mindanao, and P115.67 in the Visayas. The only explanation for this low variation in prices is that firms have more or less similar cost structure. This does not seem to be the case based on current cost estimates provided by industry sources. Based on the production costs submitted by cement firms to the Department of Trade and Industry, the latter noted that power costs alone fluctuated widely among the firms. For instance, the power cost of one firm was found to be ten times more than the others. According to the Philcemcor president, the production and debt servicing costs of the firms amount to much more than P90 per bag. Southeast Asia Cement Holdings, Inc. (FR and Lloyds) estimated the average cost of cement including depreciation and interest payments at about P80 per bag[10]. With different cost structures, firms should be quoting different prices.

It is evident from Figure 1 that the price trend was rising in a stable fashion between 1993 to 1996, a price war broke out between 1997 to 1998 (1998 was a period of low demand), and simultaneous price increases from 1999 up to the present. Notice the sequence of price increases in the year 2000 (refer to Table 17). Beginning in February 2000, the largest price increases were initiated by Phinma firms Bacnotan and Hi Cement whose prices went up by 7.14 percent and 8.25 percent, respectively. In March, the rest of the firms followed and increased their prices by roughly the same amount of change. Northern increased its price by 7.3 percent, Continental: 8.23 percent, Republic: 6.11 percent, FR Pasig: 8.14 percent, FR Teresa: 7.2 percent, and Solid: 8.08 percent. In the Visayas, Lloyds and Grand increased their prices by 9.59 percent, and Apo: 11.43 percent. In Mindanao, Mindanao increased its price by 7 percent, Davao (Phinma firm): 8.25 percent, Alsons and Iligan: 7 percent, and Pacific: 5 percent. These simultaneous price increases by the cement firms take place in the face of excess supply and weak demand as a result of construction slowdown in the country. Imports continue to come in as their share to total consumption more than doubled from 1.4 percent in 1998 to 3.84 percent in 1999.

Prior to the 2000 price increases (or late in 1999), the Philcemcor president noted that "cement prices must be such that they would allow cement firms to recover their costs of debt servicing and production and get a fair and reasonable return on their investments in order for the industry to remain viable and eventually achieve stability."[11] The industry's operating costs, including those for energy and labor, have gotten higher than in the past. Due to the depreciation of the peso, the costs of servicing the huge foreign debts incurred by the cement firms when they expanded their capacities have also risen. Production and debt servicing costs amount to much more than P90 per bag, hence cement firms, individually and for their

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[10] Philippine Daily Inquirer, "Cement prices won't go up further".
[11] Manila Bulletin, "Cement price key to viability", November 29, 1999.

own self interests, have had to increase their prices to avoid incurring heavy losses which could lead to closure.

Altogether, it is far from clear that the sequence of observed price increases occurring in the industry since January 1999 could be explained in terms of competitive interactions. The firms seem to have different cost structures and yet, the prices that they are quoting have, on the average, very low variation. Why are they increasing their prices by almost the same amount together in what seems to be a harmonious fashion? As the observed price behavior is inconsistent with competitive behavior, the only way to explain it would be in a framework with coordination. Under competitive conditions, the simultaneous price increases that the firms have been engaged in is quite unbelievable considering that demand for cement is still low and imports are able to come in. Moreover, under competitive conditions, firms will react to a negative demand shock by reducing output in contrast to firms involved in price or output coordination which react by expanding output or engaging in a price war (Green and Porter, 1984 as cited in "Hard and Soft Cartels).

E.   A Summing Up

The case study shows that deregulation and trade liberalization, while necessary, are not sufficient to ensure that markets perform efficiently and that their outcomes are reasonably equitable. In the presence of restrictive business practices, these reforms alone cannot guarantee competition as observed in the behavior of the cement firms. Trade reforms need to be accompanied by competition policy in order to strengthen market forces and ensure that their benefits flow to consumers.

In the absence of competition laws, imports are the only means to provide competitive discipline in an industry characterized by limited competition and one that is prone to collusive behavior. The government must be cautious in introducing antidumping regulations. These can reduce the welfare of the country even more than they do global welfare. Thus, the injury to the industry must be carefully weighed against consumers and user industries welfare gain.

XII.   Conclusions and Policy Recommendations

Is trade liberalization sufficient to promote competition?

Since the 1980s, the Philippines has witnessed substantial trade reforms which included tariff reduction and removal of quantitative import restrictions. These policy changes intended to expose industries to international competition and the need to improve quality, costs, and innovation. After more than a decade of implementation, we find that these reforms have not resulted in a major increase in the size of industry and systematic movement of resources towards the manufacturing sector. Therefore, despite real progress in implementing trade liberalization, the real growth of the manufacturing sector has been slow.

One possible reason for this slow growth is that barriers to competition continue to exist and are preventing the sector from maximizing the gains from trade liberalization. As

liberalization progresses, private enterprises may engage in restrictive business practices to offset the effect of liberalization. Mergers and acquisitions especially those between large scale firms may result in an increase in market concentration and a reduction in competition.

An economy may remain for a long time sluggishly trapped in a cycle of weak competition, low productivity, and slow growth if large incumbent firms with monopoly power are able to prevent new entrants into existing markets, if government intervenes to distort foreign or domestic trade, if access to credit, land, infrastructure, or distribution outlets inhibits new firms from competing vigorously. The situation becomes particularly risky for those firms engaged in the manufacture of inputs into other production processes. The output of such sectors may be essential to the ability of downstream firms to compete effectively on international markets, and weak competition or low productivity in these sectors may have social costs significantly higher than calculations of private costs might lead one to conclude (Fingleton et al, 1995).

Empirical evidence suggest that the Philippine manufacturing industry was very much protected, heavily regulated, and highly concentrated. The government policy of regulation, promotion, and protection encouraged greater concentration as a way to compete against imports and achieve economies of scale. The industry studies reviewed indicated the presence of largely regulatory barriers which included import restrictions and high tariffs as well as structural barriers such as economies of scale and huge capital requirement. Behavioral barriers like excess capacity and horizontal price fixing were also found. With the presence of high trade barriers, competition from abroad was impeded. Cartel-like practices which were sanctioned by the government as well as government involvement in the economy through state-controlled monopolies limited the potential for price competition among producers, thus failing to nurture the culture of competition in the country.

Estimates showed that for the manufacturing industry as a whole, concentration in most sectors remained high from the late 1980s to the mid-1990s. The four-firm concentration level for the whole manufacturing industry increased from 70.88 in 1988 to about 74 in 1994 to 1995. Around two-thirds of the manufacturing sub-sectors had very high concentration levels which ranged from 70 to 100 percent.

Available data also indicated that price cost margins, rough measures of profitability, moved in the same direction as concentration levels. The price cost margins (PCM) increased from 30 percent in 1988 to 34 percent in 1994 and to 36 percent in 1995. Some highly concentrated sub-sectors were found to have very high price cost margins such as tobacco (PCM: 57 percent), glass and glass products (PCM: 52 percent), food manufacturing (PCM: 41 percent), and other non-metallic mineral products (PCM: 40 percent).

The relationship between between concentration and profitability is estimated using regression techniques. The results confirmed the positive correlation/relationship between concentration and profitability in Philippine manufacturing. This positive relationship is consistent with both the structuralist school and efficiency hypothesis or Chicago school. However, given the limited R&D and S&T activities in the country, particularly the underinvestment by the private sector in manufacturing and agriculture R&D/S&T activities, one is inclined to believe that the structuralist school is more applicable to us. Future studies should take a more in-depth analysis of this issue.

L. De Dios's estimated price ratios (comparing domestic and international prices) for a sample of manufacturing commodities were used to examine the extent to which domestic and international prices have converged after trade liberalization. The estimates suggested that from the late 1980s to the mid-1990s, the manufacturing industry continued to exhibit significant and widespread price differences between domestic and international goods. There were some goods whose price gaps even widened during the years under review. Although the lack of price convergence may be explained by factors such as transportation costs, quality differences, or perishable nature of certain commodities, this may also be attributed to the ability of domestic incumbent firms with market power to maintain higher prices by foreclosing market entry (for example, through sole distributorship and exclusive dealing arrangements) as well as to the presence of government imposed measures like antidumping duties and multiple exchange rates.

The cement case illustrated the behavior of firms after the implementation of deregulation and trade liberalization in the industry. Prior to these reforms, the industry was engaged in collusion facilitated by their market sharing agreements which were accepted practices in the past and were sanctioned by government regulations. Cement is a homogeneous product and there were relatively not too many firms in the industry. A strong trade association also existed in the industry. As A. Smith stated: "businessmen's meetings, even for merriment and diversion, usually end up in connivance to restrict competition". These characteristics of the industry bolster the presumption that the firms are pursuing their own best communal interest and are consciously trying to support implicit coordination. Although the import restrictions on cement were already lifted and tariffs were set at a low rate of five percent, its high weight-to-value nature with high transport and handling costs easily makes it a non-tradable good. As such, competition from imports is limited. These conditions made coordination easier at the local level. Despite substantial market-oriented reforms in the industry, concentration levels remained high and major players continued to collude and exercise market power.

The current paper only gives a general sense of the extent of competition in the manufacturing industry owing to the broad nature of the sector and the absence of reliable data. Further industry cases are needed not only to extend the variety of industries studied but to delve into details. Hence, there is a need to collect detailed price data, to monitor the behavior of individual firms and identify restrictive business practices and other barriers to competition. These are the only means through which conclusive evidence on the state of competition in manufacturing could be reached.

To sum up, liberalizing the trade regime -- removing tariff and non-tariff barriers, removing anti-export bias, and increasing import competition – constitutes the basic agenda for the deregulation of the international trade regime and complements deregulation efforts in the domestic markets. Even if trade barriers are removed, there are other factors that can impede the pro-competitive effects of trade liberalization:

➢ The presence of non-tradables which include not only high weight-to-value products with high transport costs but also perishables as well as legal, financial, and other services.

➢ The absence of effective competition due to the ability of domestic firms to increase prices up to the international price plus transport costs and still prevent imports from entering the market.

> ➢ The presence of cartels which may divide the markets through price-fixing or geographic market sharing agreements.

The presence of these barriers prevent domestic and international prices from converging, thus muting the gains from trade liberalization. While liberalization may be a precondition for the growth of a free market, it does not, by itself, guarantee effective competition. In the absence of competition laws, there is a risk that liberalization may not be sufficient to foster effective competition and it would also be difficult to control possible abuses of dominant positions by large scale firms including multinationals. If effective competition has to emerge, trade reforms have to be accompanied by the creation of competitive market and industry structures.

It is, thus, necessary to design safeguards that would ensure market contestability and regulate anti-competitive business conduct which can damage emerging competition. A well-drafted competition law is an important policy measure that the government should undertake. The adoption of a sound competition policy and establishment of an effective competition agency will buttress measures such as trade liberalization and deregulation with more domestic market competition. It is also essential to remove the remaining barriers to competition and enforce a competition policy that would foster the efficient use of resources and promote consumer welfare while protecting the freedom of economic action of various economic agents. Markets and their development require rules to orient the behavior of agents and institutions. For instance, as observed in the cement industry, agreements between firms to divide markets have been accepted practice in the past. Given this environment, a competition agency has a critical role in changing the mindset of enterprise managers and the code of conduct of firms.

Finally, in this age of globalization, deregulation, and liberalization; the idea of having competition law becomes a fashionable one. It is easy to jump into this, however, we have to be cautious. We should be aware of the problems faced by developing countries in creating an effective competition law system which are different from those faced by developed countries. Our country needs a competition law to complement previous and on-going market-oriented reforms. It should be emphasized that any attempt to make the implementation of competition law as a source of intervention in the market, corruption, misuse of bureaucratic power, or cause of market distortions must be rejected. The competition institutions to be created must possess the following characteristics: accountability, transparency, checks and balances, and clear rules and procedures. We should be careful in formulating our competition law taking into consideration our country's institutional endowments, technical capacity, and financial capability.

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