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INFLUENCE OF IMPORT COMPETITION AND SELLER CONCENTRATION ON THE PROFITABILITY OF THE PHILIPPINE MANUFACTURING SECTOR

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This paper attempts to use the interaction of international and domestic variables in the determination of industry profitability. It uses a cross-section study of 29 three-digit level PSIC industries in the Philippines for 1988. Results show that concentration, capital intensity, and export opportunities are positively related to industry profitability while import competition and an interactive term (which integrates concentration and import competition) show significant negative influence on profitability.

1. Introduction

With the objective of becoming one of the newly industrialized countries in Asia, the Philippine government has vowed to take measures to build a strong economic foundation for the country through structural changes. One of the most important policies adopted by the government has been to promote trade liberalization to invigorate industrial competitiveness and to speed up the process of industrialization.

With all the talk about a more open Philippine economy, the question arises as to how beneficial trade really is for the country. More particularly, what is the effect of import competition on the profitability of industries? From the firm's point of view, the higher the profits, the better; and these higher profits can be gained through a greater share of the market. But from the point of view of the whole market, high profits relative to costs are not exactly desirable since they imply certain social costs such as inefficiency and lack of innovation on the part of the producers, and less freedom of choice for consumers (Shepherd, 1990). In industrial organization theory, profitability is usually seen as an indicator of

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market power. Thus, a reduction in profitability may be beneficial to society. From this perspective, the focus of analysis can be directed toward the effect of import competition on the market power exercised by manufacturing industries.

2. Review of Related Literature

A number of studies have examined the influence of market structure and international trade on the profitability of the manufacturing sector.

J.S. Bain's 1951 study claimed that on the average, profit rates of highly concentrated industries are larger than those with lower concentration because of the ability of the former to set prices higher than marginal costs, as compared to those set by the latter. This was the case of the American manufacturing industry from 1936 to 1940.

D. Greer (1971) revealed that there is a strong positive relationship between advertising and concentration in convenience and luxury goods.

Esposito and Esposito (1971) showed that industry profit is negatively affected by foreign competition and that pricing is more competitive in domestic industries when less restrictive policies are implemented. It further said that potential competition has a big influence on the pricing strategy of already established firms. The higher the barriers to entry, the greater the power of the established firms to dictate commodity prices at levels which discourage the entry of new firms.

A study of 18 major industry groups in the Philippines (Lindsey, 1977) revealed that the determinants of market concentration are size of the industry, capital intensity, efficient plant size, growth rate of industry, and the proportion of the market supplied by imports. In 1970, the Philippine manufacturing industry faced a monopolistic environment.

Advocates of the structuralist approach believe that concentration promotes inefficiency. They argue that explicit collusion happens when there is high seller concentration, and that scale economies allow firms in highly concentrated industries to be dominantly large. This proposition was supported by Carter's 1978 study.

H. Marvel's 1980 paper on the effect of trade flows on the profitability of U.S. manufacturing industry showed that exports have a weak influence on domestic profitability while imports have a strong negative significant influence on the ability of domestic manufacturers to earn above-competitive rates of return. Marvel maintained that imports act as an alternative to domestic entry in forcing rates of return to the competitive levels.

P. Turner (1980) conducted a study on import competition and growth of sales as determinants of manufacturing profitability. Like Marvel, he suggested that potential monopolistic or oligopolistic profits of industries are deterred by import competition. He further pointed out that the effect of foreign competition on profits is significant in industries with high domestic seller concentration.

In Abenoja and Lapid (1990), the manufacturing sector was found to be made up of monopolistic and highly oligopolistic industries. The study pointed out that the combination of a large initial capital outlay, the presence of an imperfect financial market, and the persistence of a high interest regime constitute a strong barrier to entry of potential competitors. Import share also yields a positive significant effect on market concentration. The factors attributed to this are the pricing and advertising capabilities of foreign industries which act as a barrier to entry, and the 1987 Omnibus Investment Code of the Board of Investments which benefited mostly established firms.

3. Theoretical Framework

W. Shepherd (1990) defines a market as a "group of buyers and sellers exchanging goods that are highly substitutable for another." An industry is an example of a market. Each market can be characterized by its performance, behavior, and structure.

3.1. Performance and Behavior of the Market

In capturing a market's performance, variables such as profits and innovation may be used. The most commonly-used measure is the profitability of an industry, more specifically the price-cost margin. Price-cost margins reflect the relative gap between price and marginal cost. It is derived by using the formula: (Price - Cost)/ Price.

In a perfectly competitive market, firms behave as price takers and thus maximize profits by equating prices to marginal costs. In such a setup, the price-cost margin is equal to zero. Any attempt by a firm to sell at a price above that which is determined by the market drives consumers away from that firm to other firms selling at the market price, since each firm faces a perfectly elastic demand curve. The highest degree of allocative efficiency is attained under perfect competition.

When there is only a single seller controlling the entire industry (i.e., a monopoly), the demand curve facing the firm is also the market demand curve. For a monopoly to sell greater output, it must charge lower prices. Total receipts increase at a decreasing rate, and marginal revenue is less than price. The difference between a perfectly competitive firm and a monopoly is that the former takes prices as given while the latter does not. A monopoly is in a better position to make excess profits than a competitive firm and its output has an effect on price. Instead of setting price equal to marginal cost, a monopoly pushes price above marginal cost, creating a gap between the two. (This gap between price and marginal cost is the one being measured by price-cost margins.) As a result of this disparity, consumers pay more than what is used to produce the goods. Net value is lost by the lower output produced by a monopoly since consumers pay a higher price for something worth less.

Aside from the effects on prices and output, monopolies also distort the allocation of resources. Instead of using inputs in producing a certain good, these are used in other industries whose output is of less economic value. "These distortions ripple through adjacent markets into the whole economy. Monopoly in one part of the economy disturbs allocation in the whole system. The larger the monopolized industry and the more severe the direct effects are, the greater is the economic harm" (Shepherd, 1990).

3.2. Market Structure Variables

The mainstream view in industrial organization may be described by the structure-behavior-performance paradigm, also known as the Harvard tradition, advocated by Joe Bain and Edward Mason. This view posits that the structure of the market influences its behavior and performance. Three aspects of market structure are discussed below.

3.2.1. Internal conditions

The internal structure of a market refers mainly to the size of the firms competing in one market. Shepherd considers it as the key indicator of market power, embodied in the size distribution of firms. There are several ways of expressing this distribution, including market share and concentration.

Market share is a firm's share of the industry's total revenue. A single firm holding 100 percent of the total revenue of the market means there is a monopoly. Firms aim to capture the biggest market share they possibly can because this means a higher rate of return. Having a high market share generally provides the firm with market power, while a low market share defines the firm as experiencing strong competition.

Concentration refers to the combined market share of the leading firms, usually the top two to eight revenue earners. A high concentration figure, expressed in percent, means a few firms comprise most of the industry; the opposite is true for a low concentration ratio.

When there are very few producers in an industry, or in the most extreme case, when there is only one producer, prices and profits are higher than those in perfect competition. Producers enjoy monopolistic or oligopolistic profits which do not reflect normal or competitive rates of return.[1]

Market structure may be one of the determining factors of a market's performance. The less competitive an industry is, the greater the market power and the greater the tendency for firms to set price above marginal costs. Since market power may be expressed in terms of concentration, the more concentrated a market is, the bigger the price-cost margin.

3.2.2. Barriers to entry

Aside from the internal structure of actual competition, the ability of potential competitors to enter the market should also be

[1]Competitive rate of profit is the minimum rate of return to capital which will allow a competitive firm to continue production. Monopolies raise prices above costs, thus allowing them the luxury of excess profits which translate to capital gains.

noted. A market may have barriers to entry which may be legal (e.g. patents) or economic (e.g. capital requirements) in nature.

Capital intensity, possibly a barrier to entry, also tends to increase the productivity of a firm as capital inputs produce more effectively than labor. In the long run, firms which use more capital than labor may lower their costs and increase their profits. But the more immediate effect of capital intensity is when firms which use more capital tend to drive away prospective entrants because the former cannot afford to be capital intensive. This thus enables existing firms to dominate the market. It is then expected that the use of capital relates positively to profits.

3.2.3. Industry growth

Another element which may affect behavior of firms is the growth in demand. When an industry experiences a high rate of growth, firms may be induced not to behave competitively and opt to secure higher profits. Meanwhile, when growth is slow or declining, levels of sale may not be enough to extract high levels of profit, and breakdowns in collusive agreements may even occur. An increase in growth rate is expected to determine high profitability.

3.3. International Trade Variables

The analysis of profitability through particular market characteristics whould be sufficient but only if the economy were closed to trade. As it is, virtually all economies have opened up to international trade so that it becomes imperative that the analysis of domestic industry profitability also be taken in the light of international trade.

3.3.1. Import competition and protection

Helpman and Krugman (1989) integrated trade theory into the theory of imperfectly competitive markets where firms are not price-takers and where prices exceed marginal costs.

Economists have long asserted that international trade increases competition; it then follows that protection decreases competition. It is also generally expected that quantitative restrictions such as import quotas are more binding in effect than tariffs.

Helpman and Krugman used the simplest case in demonstrating the effects of trade policy on domestic market power, through a single domestic firm whose monopoly power is constrained by actual or potential competition from imports. Under free trade, a domestic monopoly is not free to choose a profit-maximizing price along its marginal revenue curve since it faces the threat of competition from imports. At any price above the world price, imports will capture the market from the domestic firm (assuming that import supply is perfectly elastic at the world price). Put simply, a domestic monopoly is forced to act like a pure competitor under free trade.

Protection paints a different picture for the monopoly. If a monopoly were protected by a tariff, whether specific or ad valorem, the result will depend on how big the tariff is. If the tariff is so small that it does not choke off all imports[2], the firm's position is the same as under free trade — it cannot choose a profit-maximizing price. A medium-sized tariff results in a price between that which chokes off imports and the monopoly price. With an increase in tariff within this range, the firm can also increase its price but will have to decrease output since demand will be lower. If the tariff is so high that the price is higher than the monopoly price in a closed economy, the firm is free to charge its profit-maximizing price since the price of competing imports is no longer binding on the firm. Domestic price and output remain unchanged as if the economy were completely closed to trade if tariffs are high enough to protect the firms.

Another form of protection is quantitative restrictions, more particularly, import quotas. If domestic price is below world price, the quota will not be binding since domestic consumers will have no incentive to buy imported goods. However, for any price above the world price, part of demand will be supplied by domestic production and part by imports. When a quota is set below the free-trade level of imports, the domestic firm maximizes profit by equating marginal cost to marginal revenue (which now has three segments, like the demand curve, due to the imposition of a quota). When a quota is set above the free-trade level of imports, the more restrictive the quota is (the closer it is to the free-trade level), the greater the chances that the domestic firm will choose to produce less. When a quota is set at exactly the free-trade level of imports, the firm will

[2]Imports are choked off when domestic supply is enough to meet domestic demand, i.e., where marginal cost and demand intersect.

definitely reduce its output and increase its price. Any binding quota will induce a firm to act like a monopoly, reducing output and raising price beyond competitive levels. Binding quotas act as protection of the market power held by a firm.

In comparing import quota and tariff, Helpman and Krugman point out that the former gives a domestic monopolist more possibilities to exercise market power than the latter (given that the two restrict imports at the same amount). Import quotas lead to a lower domestic output and to a higher price relative to that brought about by a non-prohibitive tariff.

A policy of import liberalizing which removes quantitative restrictions on imports allows greater foreign competition. Reduction in tariffs can also encourage an increase in imports. Import competition, which can be defined as the importation of finished goods competing against domestic goods in the domestic market, is expected to influence monopoly power in the opposite way that import/quotas do. Instead of setting prices beyond marginal costs, firms are forced to accept prices at normal levels. Generally, it is accepted that profitability is negatively related to import competition because greater competition from foreign producers may "reveal a comparative disadvantage and hence may be associated with lower profits" (de Melo and Urata, 1986).

The effect of import competition becomes greater when the affected firms in an industry already possess substantial market power. Before the entry of foreign competitors, firms enjoying considerable market power enjoy profits well beyond the competitive rates of return. The entry of import competition diffuses the power of the firms in the market, creating lower profits for them. Meanwhile, the entry of imports in a competitive market tends to be less pronounced since the market already operates at the efficient level, and additional competition will not greatly affect the profitability of the existing producers. Aside from the current level of import competition, highly concentrated industries are also threatened by the potential entry of imports, indicated by the elasticity of import supply. The elasticity of import supply with respect to changes in domestic prices may reveal the degree of constraint that import competition puts on prices domestic producers may set. This can be represented by changes in import share over time (Turner, 1980). Moreover, import competition is encouraged when an industry is enjoying high profits. "The structure and profitability of domestic

industry are likely to have a substantial impact on the size of foreign trade flows in various commodities" (Marvel, 1980). Foreign exporters see a big opportunity in seizing some of the market power already being enjoyed by domestic firms in highly concentrated industries.

3.3.2. Export opportunities

The extent to which international trade determines profitability may be tested using the export opportunities available to domestic producers. The effect of export opportunities may go in either direction with respect to profits, depending on the ability of firms to engage in price discrimination between foreign and domestic markets. In the absence of price-discriminating ability, a firm's reliance on export sales may weaken an industry's market power, forcing firms to behave competitively. This may bring prices to competitive levels, possibly lowering profits. On the other hand, if price discrimination is allowed, prices and profits are likely to increase as export sales rise. For a small country like the Philippines, it is expected that the possibility of price discrimination will not hold since domestic exporters are usually price-takers. The possibility that export opportunities would positively influence profits arises when the exporting firms enjoy economies of scale due to the bigger market. With a bigger market, firms increase their output levels, causing average costs to decrease, and consequently increasing the price-cost margin.

A linear relationship between profitability and its determinants is assumed. With the price-cost margin as the dependent variable, the following equation is employed to demonstrate the direction and extent to which domestic industry profitability is determined by certain international and domestic variables:

$$PCM = f(M, X, MPC\_d, VACR, caplab, growth)$$
$$\quad\; - \;\; + \quad\; - \quad\;\; + \quad\;\; + \quad\;\; +$$

where

PCM	: price-cost margin
M	: proxy for import competition
X	: proxy for export opportunities
MPC_d	: interaction term which isolates the effect of import competition on highly concentrated industries

VACR : concentration ratio per industry
caplab : proxy for capital intensity as a barrier to entry
growth : proxy for growth in demand.

4. Methodology

In choosing the time frame of the study, 1988 was chosen since census data for that year are the most recently available. The structure of the profitability of manufacturing industries for that year is the focus of this paper. For variables which require changes over time (e.g. growth in value added, change in export shares, and change in import shares), 1983 was chosen as the reference year, it being the closest census year prior to 1988.

Twenty-nine three-digit level industries of the manufacturing sector are included in the cross-section study. One industry category which was not included in the study was Other Manufacturing Industries (PSIC 390) since it is too heterogenoeus to be classified into one industry.

To compute for the price-cost margin for 1988 (*PCM*), the formula lifted from Turner (1980) is: (Value Added - Total Compensation of Labor)/Value Added. This is computed per industry and results in a ratio between zero and one.

Used as proxy for import competition (*M*) is the level of import competition for 1988. This is defined as the share of the value of imports in aggregate domestic demand, expressed by the formula [Value of Imports/(Value of Products Sold + Value of Imports - Value of Exports)]. This approximates the degree of current competition domestic firms receive from imports.

To capture the effects of trade policy reforms which were expected to increase import competition, the change in import share (*MPC*) from 1983 to 1988 is computed (equal to: *M* for 1988 — *M* for 1983). It is then allowed to interact with a dummy variable (*D*) to demonstrate the joint influence of import competition and high concentration on profitability. This type of interaction variable has been used by some researchers like Turner (1980) and de Melo and Urata (1985). *D* takes the value of unity where the three-firm value-added concentration ratio (VACR) exceeds 50 percent, and is zero elsewhere. The 50 percent cut-off is used and includes 17 of

the 29 industries. Other cut-off points are also simulated (25%, 40%, 60%).

For export opportunities, the change of level of export competition from 1983 to 1988 is used. Export competition is defined as value of exports over value of products sold.

As a proxy for capital intensity, which in turn is a proxy for entry barriers, capital-labor ratio (*caplab*) is used. This is computed for by dividing total capital expenditures by total compensation for labor per industry.

Finally, as a proxy for growth in demand from 1983 to 1988, growth in value added (*VA*) is computed. To compute for growth, the following formula is used: [VA (83) - VA (88)] /VA (83).

5. Analysis of Results

5.1. The 1988 Manufacturing Sector

Before presenting and analyzing the results of the regression, a brief description of the 1988 Philippine manufacturing sector is first made. (See Table 1.)

Out of the 29 industries, only seven do not charge a price which is at least double the cost of production. This seems to indicate that most manufacturing industries in the Philippines enjoy wide profit margins. This also seems to indicate that there is a lot of room for improvement in allocative efficiency within and across industries.

The average three-firm value-added concentration ratios for the 29 industries reveal a high degree of concentration in Philippine manufacturing. This is consistent with the findings of earlier studies such as that of Lindsey (1977).

Only three of the 29 industries spend relatively more for capital than for labor, namely Petroleum refineries (353), Iron and steel basic industries (371), and Non-ferrous metal basic industries (373). These three industries obviously require capital-intensive production processes.

1977 PSIC	Price-Cost Margin	3-firm VACR (in percent)	Capital/ Labor	Real Growth (in percent)	Import Share	% Change in *M* share	% Change in *X* share
311-312	0.742	55.68	0.522	-0.15	0.180	15.14	-19.82
313	0.881	38.93	0.451	50.39	0.306	303.56	12.99
314	0.937	95.10	0.087	89.91	0.099	9.11	-37.17
321	0.550	25.25	0.802	-17.24	0.530	39.68	46.71
322	0.407	21.60	0.082	107.36	0.017	-38.35	-47.56
323	0.355	38.17	0.254	-1.30	0.487	1.93	157.04
324	0.416	27.31	0.094	-62.22	0.314	8.26	-0.34
331	0.524	28.99	0.227	-32.60	0.010	296.23	1.91
332	0.417	16.00	0.131	59.97	0.002	-20.57	-36.90
341	0.800	66.52	0.292	3.84	0.286	15.82	24.10
342	0.500	36.25	0.193	-15.31	0.144	-10.80	86.19
351	0.864	74.62	0.589	24.13	0.684	2.36	108.05
352	0.726	53.48	0.293	24.63	0.207	-2.43	23.32
353	0.940	98.59	1.126	-53.02	0.358	-18.92	79.11
354	0.795	74.81	0.252	80.63	0.376	-29.15	—
355	0.601	57.67	0.432	47.88	0.117	-37.26	-26.75
356	0.729	32.15	0.341	7.84	0.079	29.26	19.25
361	0.543	69.83	0.374	70.82	0.437	-20.27	-45.03
362	0.739	83.35	0.420	86.41	0.182	22.02	88.20
363	0.815	35.79	0.384	-7.37	0.020	217.02	-99.92
369	0.636	54.78	0.388	-9.34	0.162	21.57	387.42
371	0.843	72.59	4.317	-53.43	0.393	22.45	116.64
372	0.946	85.25	1.461	312.83	0.428	-63.38	-46.49
381	0.636	55.95	0.310	-20.53	0.285	-33.60	28.90
382	0.341	45.80	0.322	-22.61	0.893	-3.85	156.78
383	0.559	48.50	0.670	-11.84	0.536	13.13	75.55
384	0.752	70.16	0.432	-30.06	0.546	24.47	4.36
385	0.382	98.98	0.116	227.04	1.012	-2.51	-24.76
386	0.435	51.72	0.227	-18.40	0.323	-13.43	1.28

The growth of deflated value added from 1983 to1988 reveals 15 industries (almost half of the whole manufacturing sector) experienced a decline in value added. Among the growing industries, the Non-ferrous metal basic industries (372) experienced the biggest increase in value added with a 312.83 percent growth from 1983 to 1988.

The share of imports in aggregate domestic demand reveals that only five industries (321, 351, 383, 384, and 385) have more than half of their respective demands supplied by imports. The rest receive very low competition from imports, the lowest being the manufacturing and repair of furniture and fixtures, except primarily of metal (332).

While import liberalization has long been a program of past governments, it seems that the expected surge in import competition has not yet arrived. There are some industries which showed a dramatic increase in import competition from 1983 to 1988 such as Beverage manufacturing (313), Manufacture of wood, and wood and cork products, except furniture (331), and manufacture of cement (363). Thirteen industries, however, experienced a decrease in import competition. This can be attributed to the fact that while the import liberalization program was being implemented, the same goods which were being liberalized were also being tariffied. Still a lot of goods remain regulated, as was shown by de Dios (1992). Petroleum refineries (353) and the Manufacture of miscellaneous products of petroleum and coal (354) continued to be protected with the regulation of coal and its derivatives and refined petroleum products. Import shares for the two industries went down by 18.92 percent and 29.15 percent respectively. The Manufacturer of fabricated metal products except machinery and equipment and furniture and fixtures primarily of metal (381) saw a 33.6 percent decline in import share. Under the Aquino administration, quantitative restrictions and licensing requirements were liberalized for 1,488 items. But as quantitative restrictions were relaxed, tariff adjustments in the short run were simultaneously undertaken by the government. Even if quotas are more binding than tariffs, the rise in tariffs might have stifled the desired effect of import liberalization. The manufacturing sector was granted an average effective tariff protection rate of 34 percent in 1986 and 33 percent in 1988 (NEDA).

Eighteen of the 29 industries experienced increases in export share from 1983 to 1988. A greater share of the products sold by these industries (See Table 1) is sold in the foreign market. This increase may be partly attributed to the liberalization of imports. Domestic producers are forced to seek alternative markets as imports threaten to capture their share of the domestic market. The domestic market may not also be big enough to absorb increased production by firms. Moreover, the liberalization of raw materials, intermediate goods, and capital goods may have lowered the costs for exporters, making them more competitive.

5.2. Statistical Results

Regression results generally support the hypotheses made. (See Table 2).

Of all the variables tested, value-added concentration ratio and import competition turned out to be the most significant determinants of industry profitability.[3]

Concentration is positively related with industry profitability, confirming the expectation that the more concentrated an industry, the higher their prices are set above costs. This finding corroborates those of previous studies on concentration and market power (e.g. Lindsey, 1977 and Abenoja and Lapid, 1990).

Import competition, meanwhile, showed a negative relationship with profitability. This clearly indicates the distortive nature of protection on competition. The higher the share of imports in the total aggregate demand, prices, and consequently, profits, tend to be normalized. This is especially so if import competitors are not easily deterred by entry-forestalling measures which domestic firms may employ in an attempt to maintain market power.

An interactive term is introduced in the equation to test the hypothesis that import competition is not merely an additional determinant of profitability, but is also conditioned upon the competitive structure of domestic sellers (Caves, 1985). Its coefficient came out as expected — negatively-related with profitability — and at significant levels. It is also important to note that the proxy for import competition used here was change in import share, to reflect

[3]Both are significant at the 1% level in all equations.

Table 2 – Regression Results: Market Structure and Trade Variables as Determinants of 1988 Profitability (T-statistics in Parenthesis)

EQUATION	1	2	3	4	5	6	7
C	0.4143 (5.772) a	0.4257 (6.466) a	0.4278 (6.249) a	0.4198 (6.192) a	0.4023 (5.089) a	0.6890 (11.714) a	0.4367 (6.196) a
M	-0.4116 (-3.564) a	-0.3999 (-3.621) a	-0.3979 (-3.464) a	-0.3854 (-3.394) a	-	-0.1672 (-1.156)	-0.3568 (-3.020) a
X	0.4552 (1.689) c	0.3762 (1.894) b	0.4174 (2.035) b	0.1848 (1.132) c	-	0.2278 (0.819)	-
MPC_D	-0.3143 (-1.278)	-0.3561 (-1.594) c	-0.3967 (-1.717) b	-	-	-0.5019 (-1.580) c	-
VACR	0.0055 (4.1837) a	0.0057 (4.536) a	0.0062 (4.871) a	0.0058 4.509) a	0.0040 (2.690) b	-	0.059 (4.682) a
CAPLAB	0.0625 (1.746) c	0.0574 (1.724) b	-	0.0630 (1.844) b	0.0595 (1.427) c	-	-
GROWTH	0.0001 (0.443)	-	-	-	-5.26D-05 (-0.298)	-	-
R^2	0.6128	0.6090	0.5585	0.5658	0.3542	0.1221	0.4752
Adj. R^2	0.4838	0.5240	0.4849	0.4934	0.2465	0.0167	0.4349

Legend:

a - significant at 1% level
b - significant at 5% level
c - significant at 10% level

he possible entry of more imports with import liberalization. The esults prove that the industries most affected by import liberalization ınd tariff reform policy are the highly concentrated ones since ompetition from imports tend to reveal comparative disadvantages)f existing firms in these highly concentrated industries. With the ntry of competitors, concentrated industries tend to approach a nore competitive pricing structure and lose their profit margins.

To test whether the same results will appear if the cut-off ratio for the dummy variable were something other than 50 percent, three other cut-off points were used (See Table 3): 25 percent, 40 percent, and 60 percent. At 25 percent the coefficients turned out to be insignificant; at 40 percent, the results were almost the same with that of 50 percent; at 60 percent, the same negative relationship came out but at slightly more significant levels. This shows that the higher the concentration, the greater the negative influence of import competition on the price-cost margin.

Export opportunities also came out significantly positively related with profitability. The viable explanation for this positive relationship is that the expansion in market size leads to an increase in production for domestic exporters. This allows exporters to approach minimum efficient scales of production, and to consequently increase profits.

From the other variables — capital-labor ratio and growth — only the capital-labor ratio turned out to be significant in all the equations. As expected, its coefficients came out positively related with profitability, indicating the possibility of capital intensity serving as a deterrent to potential market entrants.

In equation 5 where the trade variables were omitted (See Table 2), both R^2 and adjusted R^2 declined, i.e., the significance of concentration was downplayed, indicating that the inclusion of trade variables in explaining profitability enhances the role played by concentration.

Meanwhile, market structure variables were excluded in equation 6. The results did not turn out so well, yielding low R^2, and with only the interaction term turning out slightly significant, probably since this variable included concentration.

Table 3 – Regression Results (simulated VACR; for the dummy variables)

D1 = 1 at a minimum 40% VACR; D1= 0 elsewhere

EQUATION	C	M	X	MPC_D1	VACR	CAPLAB	GROWTH	R^{-2}	R^{-2}
1	0.41	-0.41	0.46	-0.31	0.01	0.06	0.00	0.61	0.51
	(5.77)	(-3.59)	(1.71)	(-1.27)	(4.18)	(1.76)	(0.47)		
2	0.43	-0.40	0.38	-.035	0.01	0.06	-	0.61	0.52
	(6.47)	(-3.63)	(1.89)	(-1.58)	(4.54)	(1.73)			
3	0.43	-0.40	0.42	-0.39	0.01	-	-	0.56	0.48
	(6.24)	(-3.47)	(2.03)	(-1.70)	(4.88)				
4	0.69	-0.17	0.23	-0.49	-	-	-	0.12	-0.01
	(11.71)	(-1.16)	(0.81)	(-1.54)					

D2=1 at a minimum 25% VACR; D2 = 0 elsewhere

EQUATION	C	M	X	MPC_D2	VACR	CAPLAB	GROWTH	R^2	$\bar{R}^2$
1	0.40	-0.41	0.40	-0.02	0.01	0.07	0.00	0.58	0.47
	(5.26)	(-3.45)	(1.48)	(-1.10)	(3.95)	(1.94)	(0.91)		
2	0.42	-0.39	0.23	-0.08	0.01	0.06	-	0.57	0.47
	(6.03)	(-3.34)	(1.10)	(-0.35)	(4.28)	(1.79)			
3	0.43	-0.38	0.26	-0.10	0.01	-	-	0.51	0.43
	(5.82)	(-3.16)	(1.22)	(-0.44)	(4.59)				
4	0.070	-0.15	0.14	-0.32	-	-	-	0.08	-0.03
	(11.51)	(-1.04)	(0.50)	(-1.07)					

D3 = 1 at a minimum 60% VACR; D3 = 0 elsewhere

EQUATION	C	M	X	MPC_D3	VACR	CAPLAB	GROWTH	R^2	R^{-2}
1	0.42	-0.41	0.47	-0.42	0.01	0.06	0.00	0.63	0.53
	(5.98)	(-3.66)	(1.78)	(-1.64)	(4.33)	(1.62)	(0.23)		
2	0.43	-0.41	0.43	-0.44	0.01	0.05	-	0.63	0.55
	(6.69)	(-3.78)	(2.17)	(-1.97)	(4.66)	(1.67)			
3	0.43	-0.41	0.48	-0.50	0.01	-	-	0.58	0.51
	(6.50)	(-3.64)	(2.34)	(-2.13)	(5.00)				
4	0.69	-0.18	0.28	-0.59	-	-	-	0.15	0.05
	(12.00)	(-1.24)	(1.01)	(-1.83)					

Equation 7 used only import competition and concentration to explain profitability (these two variables turned out to be the most significant in earlier regressions). The result was satisfactory, with a relatively high R^2 and with both the coefficients coming out significant.

6. Summary and Conclusion

It can be said that almost all firms aim to get the highest profits they possibly can. But while achieving this goal is beneficial to them, the ones who suffer are the consumers. High industry profitability reflects a state of inefficiency, wherein prices and marginal costs do not come close to each other. With society not at its optimal point, numerous options are made available for the improvements of social well-being.

Several studies have taken separate approaches to measure and test variables which determine industry profitability. Both the industrial organization framework and international trade framework contributed support to these researches. With the evolution of the two fields, the likes of Pagoulatos and Sorensen, Lindsey, Marvel, and de Melo and Urata have chosen to combine the two together to better explain profitability. They have all proven the soundness of combining international and domestic variables as both have significant relationships with industry profitability.

With all the emphasis the Philippine government has been placing on economic reforms, particularly trade reforms, this paper has attempted to reveal how import competition really influences industry profitability. Will import liberalization really benefit the economy by making it more efficient? If indeed it will, what other factors must policymakers consider to reap the greatest benefits from the liberalization of imports?

Taking the mainstream view of industrial organization, this paper has combined structure variables with international trade variables as possible determinants of industry profitability.

The results of the regression analysis proved the soundness of theoretical claims. Industry concentration influences profitability positively since greater concentration grants firms greater market power, leading to higher price-cost margins.

Import competition turned out to be significantly negatively related to profitability. This can be explained by the normalizing effect import competition has on a market. Under free trade, monopolies cannot enjoy monopoly power because imports provide the competition that domestic producers cannot.

Even the threat of import competition may discourage industries, especially highly concentrated ones, from gaining excessive profits from consumers. This was proven with the use of an interaction term which multiplies change in import share with a dummy variable. This method has further demonstrated the interplay of foreign and domestic variables in explaining profitability.

Exports also came out as a positive determinant of profitability. Given the small-country position of the Philippines, the positive relationship would seem to indicate the possible effects of economies of scale brought about by market expansion.

As a measure of entry barrier, capital intensity turned out significantly positively related to industry profitability. Potential entrants which do not possess enough resources to be as capital-intensive as incumbent firms may have difficulty in entering an industry.

Finally, growth was not a significant factor in the determination of industry profitability.

Now that the influence of different domestic and international variables on industry profitability has been made clear, an assessment of where the country stands should be made.

In terms of competition, many industries are characterized by the domination of a few firms over the market. For the economy to function more efficiently, elements which distort the competitive environment should be eliminated. The government may choose to enact laws, such as anti-trust laws, prohibiting firms from seizing too much market power. This way, there is a legal check on firms which tend to dominate the market. Also, the government may facilitate the elimination of barriers to entry. Entry barriers should be removed since they further widen the gap between prices and costs, causing welfare loss to consumers. Capital-intensity as an entry-forestalling measure poses a big problem to a lot of small and

ıew firms with limited resources, especially with the scarcity of arge amounts of capital and with imperfections in the capital narket. The liberalization of the financial market should be pursued o allow smaller firms to enter markets more freely. Sources of unds should be made more available through more liberal bank- ›ranching laws and through the entry of foreign banks in the :ountry. These measures may help break up the alleged bank :artel in the Philippines and make capital more accessible, especially ;o the small- and medium-sized firms.

The advantage of import competition has been demonstrated in this paper and in several other previous studies. What remains to be done is the proper implementation of trade reforms to exhaust this instrument in achieving market efficiency. Although import liberalization has been pursued by the government, tariffs play a big role in protecting domestic industries, especially if they are imposed at very high rates. Thus, even with the liberalization of imports, the expected surge in import competition has not yet been felt. While the tariffication of liberalized sectors is meant to make the shift to a more open economy less shocking, the most optimum combination of import liberalization and tariff rates should be identified so that the beneficial effects of import competition to the economy may be attained.

There are still a number of other factors which may determine the profitability of industries. To attain the greatest efficiency possible, all these factors should be looked into so that the correct policies and reforms may be implemented. A careful assessment of the important economic variables may help us toward attaining development.

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