Success of Developing Countries' Export Strategies and World Trade Structure*

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World trade structure is being altered by European 1992 economic integration to highly concentrated from relatively unconcentrated as measured by the Herfindahl-Hirschman Index. Export-promotion strategies of developing countries were effective in an unconcentrated environment in conjunction with U.S. efforts to lower tariff entry barriers.

Sizeable concentration increases occur from creation of free trade zones tilting the 1990s toward an oligopolist-oligopsonist trade environment. This market structure is likely to have larger entry barriers creating a less favorable environment for export-promotion policies. Plus large trade zones may attempt to extract gains out of developing countries.

I. Introduction

Developing country growth is influenced by a host of items such as economic environment of industrial countries, and policies and factor endowments of developing countries.

Countries such as Brazil, Hong Kong, Mexico, Singapore, South Korea and Taiwan — the newly industrialized countries — have grown rapidly over the last two or three decades while other developing countries haven't. Empirical work on 41 countries by the World Bank (1987) suggests trade strategies have a major influence on economic performance.

Two types of trade policies followed by developing countries are import substitution and export promotion.[1] Countries employing strategies to develop their export markets are following a policy of export promotion. This strategy is characterized by providing pro-

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[1]See Krueger (1985) for a general applied discussion of the two strategies.

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duction incentives. Strategies involving extensive use of trade barriers to protect domestic industries from import competition are referred to as import substitution.

World Bank results for 41 countries illustrate that countries pursuing export-oriented strategies such as Hong Kong, South Korea and Singapore had more rapid growth rates of real manufacturing value added than countries pursuing import substitution strategies such as India and Chile. This was for the 1963-73 and 1973-85 time periods. According to Balassa (1981) present-day industrial economies following export-oriented strategies after WWII were Denmark, Norway and Japan.

A flaw in classifying countries in one or the other grouping, of course, is that some countries simultaneously follow both. Korea and Japan are prime examples in that both are very successful exporters but also exercise import barriers.

However, discussion continues of the relative merits of each strategy. An argument is export promotion worked for countries because it was preceded by a period of import substitution during which growth foundations were established. A counter argument says countries rejected import substitution because it wasn't working.

This paper suggests: 1) export promotion strategies worked over the past 30 years in part because of the world trade market structure, 2) the creation of free trade zones such as Europe 1992 appears to substantially alter relationships among the developed and developing countries and 3) this altered relationship may result in blocs of countries attempting to influence their terms of trade so export promotion strategies may become much less successful in the 1990s.

Industrial organization (IO) concepts are applied to world trade to develop these points. The IO concepts are common theory. Their application to world trade, however, doesn't seem to exist in the literature. This paper attempts to add to the literature by taking IO concepts and applying them to world trade. The IO theory utilized in this paper is not new nor are the world trade concepts. Their combination is, however, an addition.

II. Framework

New trade theory, as developed by Krugman (1988), discusses intra-industry trade having at its core economies of scale and diffe-

rentiated products. Firms operating in a domestic market may enjoy economies of scale but domestic market size may pose a limit to potential gains. Trade with other countries opens up larger markets and allows for further economies of scale.

Linder (1961) suggests trade develops among similar countries. Trade between developed countries such as the U.S. and Canada would be expected as the countries have similar tastes and per capita incomes. A firm fills a need in the domestic market with a product and, to expand, exports that product to a country with customers having similar needs. Much of world trade is thus among industrial countries and is intra-industry trade. For instance, approximately 60% of U.S. trade with the rest of the world was intra-industry trade in 1980.

Linder suggests a trade structure developing where industrial countries trade with industrial countries and developing countries trade with developing countries. Each type of country is likely to find export markets for its products in other countries where demand characteristics tend to be similar. So industrial countries trade in more complex sophisticated goods while developing countries trade in less complex goods.

But over 60% of developing countries' manufacturing exports go to industrial economies.[2] A relatively small number of developing countries, the newly industrializing countries, account for a large portion of such exports.

The product life cycle concept as explained by Vernon (1966) can be utilized to explain a portion of the developing country trade with industrial countries. The U.S., for instance, has more advanced technology than developing countries and therefore has an advantage in a new product. But as the product and technology become standardized, foreign production begins. Foreign producers then compete with the U.S. in export markets. Finally the U.S. ends up importing the foreign produced product.

Product life cycle stages suggest the relative advantage of industrial versus developing countries changes as products mature, providing a market outlet for developing countries. Product life cycle concepts no doubt play a role in explaining rapid growth of their manufactured exports. But market structure of industrial countries likely played a substantial role in rapid growth of developing countries following export-promotion strategies.

[2]World Bank (1987, p. 228).

This paper's hypothesis is that export-promotion strategies worked, in part, over the last 30 years because of an unconcentrated aggregate world trade market. In particular, export-promotion strategies were effective because countries in an unconcentrated world trade structure didn't retaliate.

The world trade market structure question is addressed through use of an industrial organization concept — the structure part of the structure-conduct-performance framework. The number and size distribution of firms in an industry is a structural index of concentration.

The Herfindahl-Hirschman Index (HHI) is often used as a measure of concentration. The HHI according to Helpman (1989) has desirable properties of being increasing in the actual number of firms but decreasing in size inequality among those firms. The HHI is defined as the sum of the squared market shares of each firm in the market.

Which geographic areas and which products to group together are two dimensions of market definition for the use of the HHI. Market definition is crucial in the antitrust area so considerable work has been completed.[3]

This paper focuses on countries and trade and not firms and sales. Dimensions of the market need some elaboration since industrial organization concepts are usually applied to firms.

Governments or countries seem to be the relevant geographic area for the one dimension of market definition. Development of free trade zones such as Europe 1992 are in effect mergers among governments or countries as opposed to firms. In Europe 1992 the 12 governments are merging; not individual firms in particular geographic areas. Also a merger among individual firms implies change of ownership; not so in this paper.

A hypothesis of this paper is free trade zones alter aggregate concentration; so governments, jointly, have ability to influence their barriers to entry and therefore the success or lack of success of export-promotion strategies. Countries are, therefore, utilized as the geographic area.

A merger within the context of this paper is simply governments or countries explicitly combining to set policy. That policy, in part, is free trade within the zone. The point of this paper, however, is this new union alters concentration. Thus the merged governments

[3]See for instance U.S. Department of Justice Merger Guidelines. For a discussion of these Guidelines see the symposium in the Journal of Economic Perspectives.

have the economic power to jointly influence their terms of trade and adversely impact economic performance of developing countries.

In one sense it may be overly simplistic to apply industrial organization concepts to global trade due to the multi-dimensional aspect of trade. In another sense not, as this paper deals with governments, not firms. Governments create the trade environment and directly influence a country's environment (Frankel 1989). It is within this latter environment that IO concepts are applied.

Plus all models tend to simplify and a precedent, in part, for use of countries or governments are World Bank studies.[4] The link is made between aggregate economic performance, government policy and trade strategies such as export promotion. Countries with different social systems and trading in many different goods tend to be classified as following an export promotion or import substitution strategy. The point being it is government policy that creates the environment. Thus the country (government) becomes the relevant geographic area.

The World Bank study also utilized aggregate manufacturing and primary products as their product definition. This provides a partial precedent for use of an aggregate product definition. Which products to group together is the second dimension of market definition. Previous use of aggregates in international trade suggests it is reasonable to utilize aggregate merchandise export and import groupings as the product dimension of market definition.

Thus, the HHI is applied to aggregate merchandise imports and exports of each country. The use of the HHI in a world trade framework implies each country represents a firm and each country's share of total world merchandise exports and imports is its market share of world trade. The results of the HHI are therefore to be interpreted as measures of aggregate concentration rather than measures of firms' concentration in individual markets.

In particular, aggregate concentration, as measured by the HHI, is calculated for pre and post Europe 1992 integration in an attempt to measure the concentration increase and therefore the ability to influence terms of trade.

III. Results

The HHI is calculated for industrial and developing countries'

[4]For example see World Bank (1987, p. 90).

TABLE 1
WORLD TRADE VALUES OF HHI

	Imports		Exports	
	1960	1987	1960	1987
Industrial	459	567	586	534
Developing	23	27	23	28
Total HHI	482	594	609	562

aggregate merchandise imports and exports for 1960 and 1987 for 158 countries.[5] Of the 158 countries, 20 are defined as industrial and the other 138 as developing by the IMF. Each country's market share of trade is squared and then summed for 1960 and 1987 for the industrial and developing country breakdown as given by IMF (Table 1)

An assessment of the meaning of these indices is somewhat difficult as there are no guidelines established for aggregate concentration measures. Indirectly it's possible to impute a meaning to the indices. In a highly concentrated oligopolistic market one might expect modest movement in market position.

In an unconcentrated market one might expect substantial movement in market position as countries may be able to take moderate unilateral trade actions without fear of retaliation. Developing countries, in an unconcentrated market, are unlikely to be perceived as a market threat because of their relatively small size. Thus developing countries could probably engage in actions promoting exports of their countries that my be at the expense of industrial countries without fear of retaliation.

Market share data are therefore utilized to impute a meaning to the indices (Table 2). Numerous countries, both industrial and developing, altered their market positions. This behavior suggests an unconcentrated market, implying the indices in Table 1 reflect an unconcentrated market.

Newly industrialized countries such as South Korea, Singapore and Hong Kong went from being relatively small exporters to having a major impact in the export market. Exports from those three countries account for nearly 40% of their economic activity. And nearly half of their exports goes to Big Seven countries. South Korea, for instance, was not a factor in the export market in 1960.

[5]Data for these countries are from the International Monetary Fund (1989, pp. 120–7).

TABLE 2
EXPORT MARKET SHARES OF TOP 15 COUNTRIES

1960		1987	
U.S.	17.3	Germany	12.6
U.K.	10.6	U.S.	10.9
Germany	9.6	Japan	9.9
France	5.8	France	6.3
Canada	4.9	U.K.	5.6
Japan	3.5	Italy	5.0
Netherlands	3.4	Canada	4.2
Belgium	3.1	Netherlands	4.0
Italy	3.0	Belgium	3.5
Sweden	2.2	Hong Kong	2.1
China	2.2	Korea	2.0
Venezuela	1.9	Switzerland	1.9
Australia	1.8	Sweden	1.9
Switzerland	1.6	Spain	1.5
Denmark	1.3	Singapore	1.2

Now South Korea is a sizeable exporter and nearly 60% of its exports go to Big Seven countries.[6]

Actions by the U.S. government to lower entry barriers through tariff reduction likely promoted these changing market positions. U.S. average tariff rates on all imports as well as rates on dutiable imports are currently 5 percent or less. Tariff barriers have been decreasing since the 1930s. At that time rates on dutiable imports averaged nearly 60 percent while the average tariff rate on all imports was nearly 20 percent.[7]

Entry barriers being reduced in an unconcentrated market provided an economic environment in which export-promotion strategies of countries such as South Korea, Singapore, Hong Kong and Japan worked. They worked because the world trade structure environment was favorable.

In particular, U.S. policy was oriented to rapid growth in exports of those countries. The U.S. could have worked to block exports of the countries. Instead the U.S. chose to encourage Far East exports to promote economic development in that region through keeping an open U.S. market. That policy was successful in helping Far East NICs to become economically strong. The U.S. is now focusing on developing a North America free trade zone of U.S.-Canada-Me-

[6]Central Intelligence Agency (1989, p. 154).
[7]Council of Economic Advisers (1989, p. 151).

TABLE 3
WORLD PRE AND POST EUROPEAN INTEGRATION VALUES OF HHI

Imports		Exports	
Pre	Post	Pre	Post
594	1883	562	1963

xico.

The world economic environment is being altered through creation of free trade zones to a more concentrated market. In this altered environment it is unlikely export-promotion strategies will approach the degree of past success.

Post Integration Results: Europe 1992 and U.S.-Canada are examples of creation of free trade zones. The U.S.-Canada integration is expected to result in gains for Canada amounting to 8-10% of GNP according to Cox (1985). In Europe, the expected contribution from integration to baseline GDP is calculated at 4.5%.[8]

While generating gains for the economic blocs, these integrations, in particular Europe 1992, substantially alter the structure of world trade. On an a priori basis one would expect the Europe 1992 integration of 12 countries to result in a major increase in aggregate concentration.

It is not a unique point that concentration increases from the integration of the 12 countries since the 12 are reduced to one. It is a natural result.

Application of common IO theory to measure that increase in concentration at the country level, however, has not been done before. Second, according to basic theory, structure changes may lead to behavior changes.

The HHI, calculated for the European integration, measures the extent the economic environment is altered (Table 3). The indices under "pre" in Table 3 are directly from Table 1. The ones under "post" are calculated by first summing the market shares represented by the individual 12 European countries integrating into one free trade zone, followed by summation of the squares.

The above process for calculation of the HHI increase in a merger is the one the U.S. Department of Justice (1984) follows for

[8]Council of Economic Advisers (1989, p. 181).

measuring the concentration increase due to a merger. The only difference, therefore, between the pre and post columns in Table 3 is the effect of the 12 country 1992 European integration on concentration.

The European 12 country integration alters market structure from unconcentrated to a highly concentrated one. An HHI post-integration value of greater than 1800 is an increase of more than a factor of three relative to pre-integration values. Since no guidelines are established for these aggregate indices one can impute a meaning through market share data.

The 4 top global competitors have approximately a 40 percent share of world trade exports before integration. After integration the top 4 competitors have slightly over a 70% share. The top 3 — the European 12, U.S.-Canada and Japan — have slightly more than a 68% share. The remaining 32% share is split among the other 143 countries. A few very large economic units and many almost atomistic units. The top three importers account for 66% of imports.

Market share data and the HHI imply aggregate concentration increases dramatically due to the European 1992 integration. Before integration the HHI implies no or very little monopoly power; after integration the HHI suggests the presence of monopoly power and collusion. The U.S.-Canada integration, in comparison, only increases the HHI by approximately 100 points.

Another interpretation of these aggregate Herfindahl indices can be obtained by referring to U.S. Justice Department guidelines (1984). U.S. industries having a HHI value under 1,000 are classified as being unconcentrated, as implicit coordination among players is likely to be difficult. U.S. industries with a HHI value greater than 1,800 imply a highly concentrated market.

These guidelines suggest a change in the HHI of the magnitude measured due to the European integration, were it to occur in a U.S. industry, would reflect movement from an unconcentrated to a highly concentrated one.

IV. Implication

This increase in potential monopoly power and collusion in the announced European 1992 integration suggests a changing market model in the 1990s. Before creation of free trade zones the Herfindahl indices and market share data tended to point toward a market

structure of monopolistic competition in the trading of goods. In particular, the HHI did not very dramatically between 1960 and 1987. But after creation of free trade zones, oligopoly and oligopsony models appear to fit the large economic units in world trade.

Mutual interdependence is a key characteristic of the oligopoly and oligopsony models. It is unlikely these models fit the pre-integration time period when countries undertook unilateral trade actions such as export-promotion strategies and significantly altered their competitive position.

After integration each oligopolist-oligopsonist needs to work out how other large players will respond. Implementation of measures by on bloc to improve its position will likely lead to offsetting actions by other large economic blocs. Thus one may see major players move toward a collusive framework.

In this oligopolist-oligopsonist framework it may be extremely difficult for developing countries' export-promotion strategies to be successful. Market shares, concentration, and potential barriers to entry will be higher with formation of economic blocs. Export-promotion strategy success rests on market shares, concentration, and barriers to entry being relatively low.

Post-integration values of aggregate concentration will increase substantially. For instance, the European 1992 12 have a combined market share of over 41%. This equates to an HHI of nearly 1700 — suggesting dominance. Thus, post-integration economic environment parameters appear unfriendly toward export-promotion strategies.

Additionally, the post-integration environment may result in a situation where the top three act to extract gains from smaller countries. The top three will unlikely be able to extract gains from each other but may be able to extract gains from smaller countries.

One can argue that the top three because of the large trade volumes with each other will attempt to extract gains from each other and not smaller countries. However basic oligopolist-oligopsonist theory suggests mutual interdependence behavior. Extracting gains from each other will be extremely difficult as offsetting actions are likely to be forthcoming.

Instead explicit collusion among European bloc members and/or the U.S.-Canada could take the form of a tariff aimed at developing countries to favorably influence the terms of trade of the large blocs. The absolute size of the major blocs relative to developing countries following export-promotion strategies suggests such be-

havior may be forthcoming.

As indicated above, nearly half of some newly industrialized countries' exports go to Big Seven countries and exports account for nearly half of the NICs' economic activity. On the other side according to the CIA (1989), a relatively small proportion of Big Seven exports go to the NICs' — under 8%. Thus large blocs appear to be positioned to extract gains from smaller countries through implementation of a tariff.

Imposition of a tariff on a good(s) from developing countries would mean demand for that good would fall. The world price of the good would fall in response since any tariff imposition by the Europe 12 for instance would be on good(s) where Europe accounts for a sizeable proportion of total demand for the good. As long as export prices remained unchanged, in this example, the European 12 could favorably influence their terms of trade at expense of developing countries.

Expansion of the free trade zones to include what was East Germany into Europe 12 and possibly Mexico in the U.S.-Canada bloc suggests an additional incentive for extracting potential gains from the Far East NICs. Labor-intensive industries have been one of their advantages over the past 30 years. Expansion of free trade zones will perhaps negate much of that Far East advantage. Thus the bargaining power of the free trade zones to extract gains from the Far East NICs is enhanced.

Creation of free trade zones appears to be altering market structure to the extent that implementation of export-promotion strategies in the 1990s will meet with much less success than in the past, particularly in the NICs of the Far East.

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