Organization and Performance of World Food Systems: NC-194

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NATIONAL COMPETITION/INDUSTRIAL STRUCTURE POLICIES AND INTERNATIONAL TRADE IN FOOD AND PROCESSED AGRICULTURAL COMMODITIES

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SYNOPSIS OF AND PAPERS PRESENTED AT A NC-194 MINISYMPOSIUM HELD AS PART OF THE 21ST INTERNATIONAL CONFERENCE OF AGRICULTURAL ECONOMISTS, TOKYO, JAPAN, AUGUST 22 - 29, 1991.

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NATIONAL COMPETITION/INDUSTRIAL STRUCTURE POLICIES AND INTERNATIONAL TRADE IN FOOD AND PROCESSED AGRICULTURAL COMMODITIES

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Synopsis

This symposium was motivated by the evolving perception that industrial organization and international trade are inexorably interrelated. One linkage that has been suggested, primarily in the writings of Michael Porter, Harvard University, is that, international competitiveness is negatively related to domestic concentration of market power. If this relationship has validity, countries have a national interest in promulgating a strong pro-competition or anti-trust policy, the antithesis of which is a national champion industrial policy. The purposes were to gain an understanding of national competition and industrial structure policies and to generate insight into researchable hypotheses regarding how such policies relate to international trade.

Four prepared presentations set the stage for subsequent discussion; the first three of which are included in this proceedings. I. Sheldon reviewed the rapidly-expanding literature that conceptually links industrial organization and international trade, the majority of which addresses either the competition-disciplining effects of imports or the impacts of imperfect competition on welfare gains from trade. In light of few theoretical antecedents, D. Henderson presented empirical and intuitive ideas that lend support to the contention that domestic competition begets competitive international market performance. B. Marion and M. Hawkins characterized competition policies in the United States and Canada, including a generally futile search for evidence of national trade objectives therein. To the contrary, when a trade objective is explicitly incorporated into national industrial policies, it tends to be in the form of a "national champion" policy, i.e. encouragement of an industrial combine for purposes of exploiting foreign markets. This synopsis characterizes the open discussion.

Considerable discussion focused on the extent to which food industries in various countries are non-competitive in structure and behavior. Relatively low food prices in areas such as North America and Western Europe were suggested as a sign of only modest market power, although consensus reflected wide-spread recognition of monopolistic competition and/or oligopoly in food manufacturing and distribution, and particularly at retail. Little was perceived regarding potential implications of market power in food retailing for international market performance, with the possible exception of buying cartels. However, the phenomenon of multinational retail buying combines has not yet gained sufficient momentum to generate many observations regarding market behavior or performance.

It was recognized that most empirical measures of market power are incomplete, thus creating the potential for error in quantitative analysis of market power-performance relationships. Arguably, competitive behavior and price-cost margins are not perfectly and negatively correlated; competitive advantage may result in a positive margin during specific moments. The presence of market power must be unambiguously revealed if its impact on international market performance is to be ascertained. Casual observations, formed on incomplete information regarding market power, can be cited in support of both positive and negative impacts on external markets.

Several interpretations of international market performance were visited. The marketing literature, and to some extent industrial organization, recognize pro-commerce type objectives; trade as a share of domestic shipments for example. By contrast, international trade thought turns mainly toward welfare maximization objectives; either for a specific country or in a more global context. No consensus emerged, although it was generally recognized that choice of performance criteria can greatly influence what are the relevant antecedents of such performance in international markets.

In the food sector, foreign direct investment (FDI) figures as prominently into international market behavior as does trade. It is not clear, however, how FDI is accounted for in market performance measures, nor what its impact is, if any, on competition in either

out-bound or in-bound countries. In the context of Porter's work, sustained out-bound FDI has been considered an equivalent to exports as an indicator of national competitive advantage. Some argue that in-bound FDI is an important source of competitive pressure on home firms that, in turn, improves home firm export performance, but compelling theory and/or evidence is elusive. Because the value of food shipments from foreign affiliates appears to substantially exceed the value of international trade in these products, the interrelationships between FDI, domestic competition, and international market performance need careful analysis.

Because of the prominence of FDI and other idiosyncracies in the food sector, the issue was raised, do food industries have characteristics that result in unique domestic competition-international performance relationships? If so, case studies or intra-industry analyses rather than generalizable postulates may be the most realistic expectation for empirical work in this area. This would parallel the new empirical approach that now dominates in industrial organization.

Issues were also raised regarding the relative importance of industrial organization vis-à-vis macroeconomic factors such as exchange rates and institutional factors such as export restitutions as determinants of international competitiveness.

Regarding conclusions reached, the general sense was that national competition policies have not been used explicitly to achieve international market performance objectives. Whether they could, or should be so used, remain open questions. However, sufficient theoretical reasoning and empirical observation exists to justify a more thorough search for systematic linkages between industrial organization and international trade in the food sector.

COMMENTS ON THE INTERFACE BETWEEN INDUSTRIAL ORGANIZATION AND INTERNATIONAL TRADE

Ian M. Sheldon

1. Introduction

The terms of reference for this discussion group are to consider the interaction between national competition and industrial structure policies and the international market performance of the food and processed agricultural products sector. Specifically, the aim is to consider whether a relationship exists between the market structure and behavior of domestic food manufacturers and their performance in international markets, and hence whether competition and industrial policies have a role to play in affecting that performance.

In order to place the discussion in context, my comments are aimed at providing a brief, conceptual background that focusses on the interface between industrial organization and trade. Much of the literature in this area has been carefully reviewed in surveys by Jacquemin (1982), Caves (1985, 1989), Krugman (1989) and Pagoulatos (1991), so my purpose here is to distill what are the salient features of the literature, and to focus on some policy implications.

2. Industrial Organization and International Trade

While one can now usefully talk about the crossover of ideas between industrial organization and international economics, the evolution of such a synthesis really came out of each branch independently adapting aspects from the other. Specifically, in the early 1970s, industrial economists operating within the structure/conduct/performance (SCP) paradigm

began to introduce international-type variables into cross-industry regression studies, in the belief that such variables would affect competition in domestic markets. At about the same time, international trade economists, who until then had worked entirely within the Heckscher-Ohlin-Samuelson tradition, began to borrow ideas from industrial organization by allowing for firms selling differentiated products in international markets produced under a technology of increasing returns. Consequently, it is useful to focus separately on the main findings of these two literatures.

Industrial Organization in a Setting of International Trade

First, it is now widely accepted that the competitive discipline of imports can have an impact on the extent to which domestic market power will generate domestic monopoly profits. Following Jacquemin, suppose a market for a homogeneous good is characterized by a static, non-cooperative oligopoly of n domestic firms competing with a competitive fringe of foreign firms. Assuming the domestic producers play out a Cournot game, manipulation and aggregation of the domestic firms' first-order conditions generates the following equilibrium relationship:

$$L_d = \frac{H_d(1 - t_m)}{\varepsilon_d + \gamma_s \cdot t_m}$$

where L_d is the domestic Lerner index, or industry price-cost margin, H_d is the domestic industry Herfindahl index, t_m is the share of imports in total domestic sales, ε_d is the industry price elasticity of demand and γ_s is the price elasticity of supply of imports.

Essentially, the model predicts that, price-cost margins will vary inversely with the share of imports, and also, the effect of import competition on price-cost margins interacts

with both seller concentration and the supply elasticity of imports. Specifically, as Caves (1985) states, import competition has to be both able to discipline and have something to discipline. A large number of cross-sectional regression studies indicate support for this hypothesis[1].

Second, in contrast to the role of imports, the impact of exports on domestic behavior is a lot less clear. On the one hand, if a small country assumption holds, and domestic firms are unable to price discriminate between home and foreign markets, exporting firms will be constrained to behave competitively in both the domestic and foreign markets, i.e. price-cost margins will be inversely related to exports. Alternatively, if a domestic monopolist is able to price discriminate, the opportunity to export can increase the domestic price-cost margin at the expense of domestic consumers. Although, as shown by Pugel (1980), this relationship is not unambiguous, i.e. overall price-cost margins for the exporting firm(s) are a weighted average of the margin on domestic and foreign sales. Even if profits increase through discrimination, price-cost margins may not, as increases in the domestic margin may be offset by decreases in the export margin. To get definite predictions here, account has to be taken of the exporters' cost conditions (Huveneers, 1981). Perhaps not surprisingly, the empirical work on exports and domestic market performance has not produced uniform results[2].

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[1] Lyons (1981) surveyed twenty-three studies, all providing a large measure of support for the import discipline hypothesis.

[2] Pagoulatos and Sorenson (1976) found exports to have a negative effect on margins, while Geroski (1982) found the opposite.

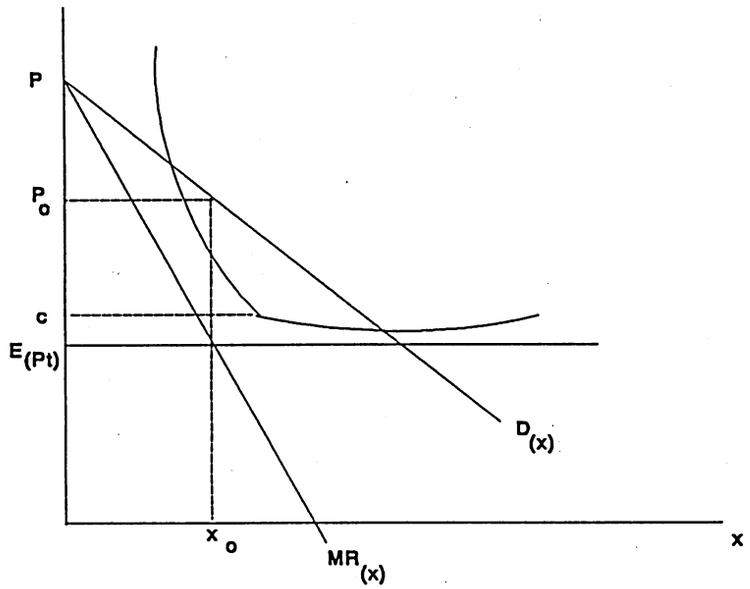
The case of a domestic firm being able to price discriminate between the home and foreign market is of course the orthodox explanation of dumping, i.e. the good is sold in the foreign market at a lower price than the home market, and given U-shaped cost curves, allows for the possibility that the foreign price is below the average cost of production (see Caves and Jones, 1973, and Phlips, 1983). This conforms to Article 2(a) of the GATT's anti-dumping code, and has been termed by Norman (1988) as the "weak" definition of dumping.

However, it is possible to predict that export prices will be below marginal cost, i.e. the "strong" definition of dumping. Davis and McGuinness (1982) have shown that the traditional price discrimination model of dumping can be adjusted to allow for the latter case. Specifically, as shown in **Figure 1**, they assume that the domestic firm has an L-shaped average cost function, generated by constant marginal costs and a fixed cost element; export prices are uncertain *ex ante,* and the expected export price $E(p_t)$ is less than marginal cost c. However, there is some positive probability that the export price will be above marginal cost, i.e. if $f(p_t)$ is the probability density function with an upper limit of b, then:

$$\int_c^b f(p_t)\,dp_t > 0$$

Ex ante, the firm selects output x* in order to equate expected marginal revenue to costs. *Ex post*, marginal revenue is equated between the two markets, where possible. If the marginal revenue from selling all output on the domestic market is less than the world price, $MR(x^*) < p_t$, domestic output x_d will be chosen such that $MR(x_d) = p_t$, the remaining output $x^* - x_d$ being exported at the world price. If $MR(x^*) > p_t$, all output is sold on the home market. Therefore, there are circumstances where output is sold on the world market

Figure 1



at a price p_t below marginal cost, and this possibility of dumping encourages the domestic firm to produce more than the no-trade optimum at x_o.

In another version of their model, Davis and McGuinness argue that if the domestic firm is not protected from the threat of direct entry into the home market, it is possible that dumping below marginal cost may provide a credible means of deterring entry. This prediction is very similar to the argument that firms invest in excess capacity in order to credibly deter entry (e.g. see Spence, 1977). In this instance, output is restricted to the domestic market, the remainder being sold on the world market at prices below marginal cost, the domestic monopoly profits outweighing the losses incurred in the export market. Entry into the domestic market is credibly deterred because potential entrants fear that the incumbent will switch exports back to the domestic market in order to drive down the domestic price.

Now one can turn these predictions around and ask the following question, what is the impact of market structure on trade performance? In the case of domestic firms unable to price discriminate, trade performance and domestic market performance are the same under market structures of perfect competition and monopoly, i.e. domestic prices equal the world price, and firm's export market shares will depend on costs. In the case of firm(s) that can price discriminate/dump, trade performance and domestic market performance are not necessarily the same. Monopoly rents are extracted from domestic consumers while foreign consumers pay either the world price or a price lower than that, i.e. in this case the ability to price discriminate benefits foreign consumers at the expense of the domestic consumer. Consequently, one might argue that the relevant policy prescription here is to either remove the domestic market distortion through either a production subsidy, competition policy or expose the domestic market to imports.

It should be noted, however, that this conclusion depends critically on both the benchmark one adopts for judging domestic and foreign market performance and the assumption that the world price is the competitive price. If performance is measured in terms of maximizing welfare, and the world price is competitive, removing the domestic distortion is the optimal policy intervention (see Bhagwati, 1971). However, if the world market is imperfectly competitive, the optimal intervention will be a tax-cum-subsidy targeted at both the domestic distortion and with respect to the trade distortion. Specifically, monopoly rents can be shifted from foreign firms to the domestic firm(s) - this policy outcome will be dealt with more explicitly in the next section.

In conclusion, therefore, industrial organization research now routinely incorporates international variables into theoretical and empirical analysis. In the case of imports, the policy prescriptions are clear; taking account of imports in the measurement of domestic seller concentration is crucial in evaluating market structure, and ensuring free access to imports will act as a discipline to domestic monopoly distortions. In the case of exports, competition policy and/or removing trade barriers will also be a discipline on the domestic market if it prevents firms from discriminating between the domestic and world market and ensures domestic consumers pay the competitive world price. If the world market is imperfectly competitive, it is possible for the domestic government to implement policies that enable domestic firms to earn more rents from the foreign market.

International Economics and Industrial Organization

It might be argued that the incorporation of industrial organization concepts into trade theory has been more radical than the recognition of trade by industrial economists. To quote Krugman (1989):

> "Traditional trade theory was, by the late 1970s, a powerful monolithic structure in which all issues were analyzed using variants of a single model. The new literature has successfully broken the grip of that single approach. Increasingly, international economics, like industrial organization, is becoming a field where many models are taught and research is an eclectic mixture of approaches." (p.1214)

Without doing too much damage to these new developments, they can be usefully treated under two headings. **First**, and least controversial, the theory of international trade has

been adapted to allow for the presence of increasing returns. Specifically, the existence of two-way trade in similar products (intra-industry trade) can now be explained. **Second**, and far more controversial, the analysis of trade policy in the presence of imperfect competition has focussed explicitly on oligopoly in international markets and the possibility that governments can alter the strategic interaction between firms in order to shift rents to domestic firms, hence the title "strategic trade theory".

- By the early-1980s a number of models, based on different market structures, had been developed to explain the existence of intra-industry trade[3] (see Greenaway and Milner, 1986 for a survey). Probably the most general are those models based on a market structure of monopolistic competition, the major contributions being by Krugman (1979), Dixit and Norman (1980), Lancaster (1980), and Helpman (1981), with a major synthesis of ideas being presented by Helpman and Krugman (1986).

Essentially, this type of model assumes all countries share the same technology, whereby in each economy, a perfectly competitive sector produces a homogeneous good under a constant returns technology and a second sector produces differentiated products under a technology of increasing returns. Focussing on the latter sector, free entry generates a market structure of monopolistic competition, while increasing returns limits the number of differentiated goods that can be produced under autarky. If trade is allowed for and countries have similar factor endowments, each will produce its own supply of the homogeneous good, whereas in the differentiated goods sector, economies of scale will

[3] Empirical evidence for intra-industry trade was generated long before any coherent explanation for the phenomenon was developed, e.g. it was first observed by Verdoorn (1960) in trade between the Benelux countries.

ensure that in an integrated economy, production of any product will be concentrated in either one country or the other.

Consequently, given a demand for variety[4], the structure of trade will be pure intra-industry, where each country produces, consumes and exports part of the range of differentiated products and imports the rest from the other country(ies). Consumers benefit from greater variety, and, depending on the precise specification, economies of scale may be more fully realized and prices fall. It is also easy to show that if the homogeneous good sector is labor-intensive in production while the differentiated goods sector is capital-intensive, allowing for differing factor endowments will simultaneously generate inter-industry trade as one country is a net exporter of the homogeneous good and the other a net exporter of differentiated products. Also, there will be intra-industry trade within the differentiated good sector, although the exact location of goods production cannot be predicted. In the limit, as factor endowments become perfectly asymmetric between countries, trade will be pure inter-industry in character.

The policy implications of this new theory of trade are straightforward. Domestic competition policy can be directed to ensure that there is freedom of entry into the differentiated products sector. This means not only that the number of varieties produced under autarky and trade is maximized, but also that prices are driven to average cost in equilibrium, i.e. the Chamberlinian solution[5]. Free trade is optimal as consumers benefit

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[4] This has either been modelled with Dixit-Stiglitz (1977) type preferences, where consumers derive utility from the number of varieties, or with the Hotelling-Lancaster approach of diverse preferences.

[5] What Lancaster (1980) has described as perfect monopolistic competition.

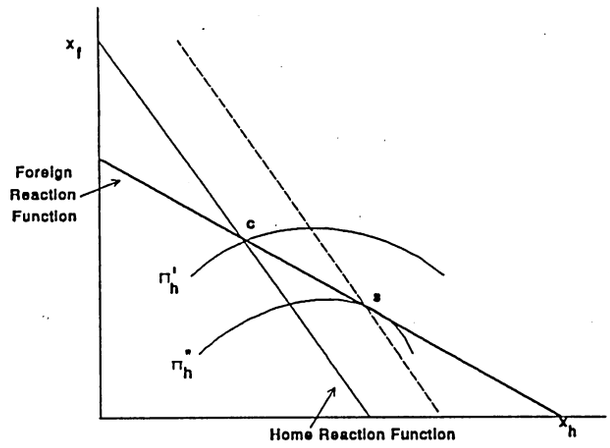
from the greater number of varieties that can be supplied and resources may be better utilized if economies of scale are more fully exploited in the trade equilibrium.

- The analysis of trade policy under market conditions of oligopoly, compared to the theory of the structure of trade under increasing returns, has now achieved a certain notoriety, in that it seems to provide a new rationale for protection. The standard result in the literature was developed by Brander and Spencer (1985). Their model assumes a duopolistic situation for a homogeneous good where a domestic firm competes in the world market with a foreign firm, there being no domestic consumption. The two firms play out a simultaneous Nash game in quantities, consequently, neither firm can improve on the Cournot outcome, i.e. position C in **Figure 2.**

If the domestic government can pre-commit to paying its firm a per unit export subsidy, this allows the domestic firm to credibly increase its output on the world market and earn the equivalent level of profits to those obtainable at the Stackelberg outcome S, i.e. the government alters the strategic outcome of the game. Hence, rents are shifted to the home firm from the foreign firm, and because profits rise by more than the cost of the subsidy, national welfare rises. Also, the world price of the good may fall, depending on the underlying demand structure.

This basic result has been extended in a number of different ways. First, Thursby (1988) has adjusted the Brander and Spencer result to the situation of the international market for a processed agricultural commodity whereby a marketing board in one country competes with a private processing firm(s). Second, strategic trade policy has been applied to the situation where a domestic firm(s) compete in the home market with a foreign

Figure 2



firm(s). Specifically, Krugman (1984) has shown that where the technology is one of increasing returns, an import tariff allows the domestic firm(s) to become more efficient and thence to increase export market share as the foreign firm(s) cuts back output and becomes less efficient.

Third, Dixit (1988) has shown that in the case of domestic market competition, optimal policy intervention involves a tax-cum-subsidy policy whereby a production subsidy is targeted at the domestic monopoly distortion (a proxy for competition policy) and a tariff is targeted at the importer. Importantly, he shows that in the face of foreign export subsidies, the domestic production subsidy should be reduced because of the competitive discipline afforded by lower import prices and the tariff should be partially increased to extract rents from the foreign firm. In the face of dumping by the foreign firm, i.e. prices are set below average cost, both the domestic production subsidy and import tariff should

be reduced - which is a strong argument against the standard use of anti-dumping measures by industrial countries[6].

It would seem, on the face of it, that where international markets are oligopolistic, there are theoretical arguments for the use of export subsidies and import tariffs. However, as most researchers in this literature have acknowledged, such a conclusion comes attached with a "Government Health Warning". The basic critique of strategic trade policy has been set out by Grossman (1986), the main points being listed here:

- the export policy variable is highly sensitive to the underlying game being played by firms. If the strategic variable is price, the relevant policy is an export tax, i.e. if firms play out a Nash-Bertrand game, an export tax on the home firm allows it to credibly increase its price and hence make the world market less competitive.

- as the number of domestic firms acting non-cooperatively increases, the case for an export subsidy shifts to an export tax in order to force firms to act less competitively in the world market.

- with free entry, export subsidies will tend to induce excessive domestic market entry, thus reducing the extent to which economies of scale are realized and possibly driving down the export price.

- with domestic consumption, an export subsidy will tend to divert output from the home to the foreign market, driving up the domestic price and increasing the domestic market distortion.

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[6] See *The Economist* (15 June, 1991, p.20) for a trenchant critique of the use of anti-dumping duties.

- an export subsidy, while it has the effect of reducing marginal costs for the exporting firm, will tend to raise marginal costs in other sectors through distortion of factor prices.

- if foreign governments also use export subsidies, the benefits to domestic firms will be offset, the only beneficiaries being world consumers who face lower prices. However, in the absence of cooperation between governments, the structure of the policy game is a prisoner's dilemma, i.e. intervention is the dominant equilibrium.

3. Conclusions

In conclusion, therefore, the relationship between market structure and international trade is a difficult one to generalize about, at least from the standpoint of economic theory. The pro-competitive effect of imports on domestic market performance is now well understood, and the relationship is strongly supported by the empirical findings to data. In the case of exports, there is no general presumption about the relationship between trade performance and domestic market structure. Under a small-country assumption, the effects of domestic market structure on trade are the same for monopoly as for competition, but once price discrimination is allowed for, foreign consumers benefit at the expense of domestic consumers in terms of prices.

In the case of oligopolistic competition in international trade, if firms are playing non-cooperatively, they earn monopoly rents if their strategic variable is quantity and no monopoly rents if they compete in price, assuming homogeneous goods. In both cases, there is a theoretical argument for government to alter the strategic interaction of firms in order

for rents to be increased and shifted to domestic firms. However, as outlined in the previous section, the efficacy of this argument is highly sensitive to assumptions about entry, factor prices and retaliation by other governments.

Finally, in the case of product differentiation and economies of scale, it has been shown that, under autarky, the number of goods produced in the domestic economy will be limited. Consequently, when trade is allowed for, the existence of such market imperfections means that additional gains from trade will be made in the form of greater variety and realization of scale economies. However, the monopolistic competition models of trade are unable to predict the direction of trade, unless resort is made to the traditional factor endowments explanation of trade.

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OBSERVATIONS LINKING DOMESTIC INDUSTRIAL ORGANIZATION AND INTERNATIONAL MARKET PERFORMANCE

Dennis R. Henderson

Introduction

Sheldon's review of generally received economic thought aptly demonstrates that little guidance can be found in microeconomic theory regarding the effect, if any, of domestic industrial organization on external market performance. My purpose herein is to support a contention that, domestic competition is a determinant of international competitiveness. By logical extension, I offer a corollary proposition that the organization of domestic or home market industries affects export performance of firms therein and thus, the structure of trade.

In recognition of the lack of a strong theoretical antecedent, I present the argument in support of these contentions or propositions primarily on the basis of a combination of economic intuition and casual empiricism. Because much of the logic and many of the supporting empirical observations are drawn from work by Michael Porter and his associates leading up to publication of his recent book *The Competitive Advantage of Nations* (1990), I label my basic hypothesis the "Porter Paradigm", to wit:

> Export shipments from a given industry are negatively related to market power exercised by home firms in the domestic market.

For the purposes of discussion I suggest that, if we find this hypothesis offers an appealing line of logic, it presents a challenge to economic theoreticians to develop a

tractable and testable model explaining why it is so. If the hypothesis is valid, implications for national competition, antitrust, and industrial policies are obvious.

Defining International Market Performance

As a marketing cum industrial organization economist, my definition of international market performance is synonymous with the concept of export competitiveness. While this may be construed to have mercantilistic overtones, I am willing to leave definitions that capture the Pareto-like objective of global welfare maximization to the domain of international trade theorists. I do not intend to imply a value judgement but take export competitiveness to be simply a relative indicator of the external market performance of one entity (firm, industry, country) compared to that of other entities. In and of itself, it is no more inherently good or bad than are trade deficits or surpluses of payments.

Even so, there are different concepts of what is meant by export competitiveness. Not infrequently, the term is taken to mean such things as a positive trade balance or low real unit labor costs--presumably the more positive the trade balance and/or the lower the unit labor costs, the greater is export competitiveness. More pertinent to market performance analysis are relative export measures, including: export propensity (XP), export market share (XMS), and relative export advantage (RXA), where:

$$XP = \frac{Exports}{Total\ Shipments}$$

$$XMS = \frac{Exports\ to\ Market\ i}{Total\ Sales\ in\ Market\ i}$$

and

$$RXA_i = \frac{XP_i}{AVG\ XP_{j...n}}, \quad \textit{where } i = \textit{home country and } j...n = \textit{all other countries}$$

Perhaps the most sophisticated relative external market performance measure developed to date is revealed competitiveness (RC), put forward by Vollrath (1989) as a means of comparing a country's relative export advantage to its relative import penetration for the same product, i.e.

$$RC = \frac{RXA}{Relative\ Import\ Penetration\ (RIP)}, \quad \textit{where}$$

$$RIP_i = \frac{IP_i}{AVG\ IP_{j...n}}, \quad i = \textit{home country, } j...n = \textit{all other countries, and}$$

$$IP = \frac{Imports}{Domestic\ Shipments}$$

Empirically, XP has an important advantage in that it can be calculated using data solely from the country of interest. By contrast, the other measures require domestic sales data for all other relevant countries; data that are often difficult to obtain at least on a product class definition that is sufficiently disaggregated for meaningful industry analysis. In an analysis of the determinants of external market performance by the U.S. food manufacturing industries, Henderson and Frank (1990) compared the four relative trade intensity measures XP, XMS, RXA, and RC as alternative specifications of the dependent variable. In that study, export propensity, export market share, and revealed competitiveness all provided comparable (and robust) results, suggesting that they may be used more or less

interchangeably with no loss of intelligence. By contrast, results using relative export advantage as the performance measure were neither consistent nor robust.

Determinants of International Competitiveness

Perhaps the most extensive study of international industrial competitiveness reported to date is that by Porter and associates, mentioned earlier. Case studies were made of more than 100 industries in the 10 nations that collectively account for over 50 percent of all international commerce, covering a 15 year period, 1971 through 1985. A "substantial presence" test was used to measure international competitive advantage, i.e. substantial and sustained exports to a wide array of other nations and/or significant outbound foreign investment based on skills and assets created in the home country. A form of cluster analysis was used to identify characteristics most generally associated with industries that met the substantial presence criteria.

While no theoretically derived hypotheses regarding the determinants of international competitive advantage were tested in the Porter analysis, the results are empirically revealing. Four general categories of determinants are suggested; only the first bears strong resemblance to neoclassical trade theory:

1. Factor Conditions. This refers to a nation's endowment of factors that contribute to the production and distribution of a product. As such, it is similar to the concept of factor endowments in the neoclassical theory of comparative advantage and international trade. However, the traditional factor groupings of land, labor and capital are elaborated to include knowledge resources and infrastructure. The former are taken to mean the stock of scientific, technical and market knowledge that resides in universities, public and private

research institutes, statistical agencies, trade associations, business and scientific literature and the like. The latter refers to such commerce-enhancing factors as transportation and communications systems, mail and parcel delivery, funds transfer mechanisms, contract law, and cultural and social institutions that affect the attractiveness of a place to live and work.

2. *Demand Conditions*. As with the following factors, there is little parallel to this set of conditions in neoclassical trade theory. This category refers to unique aspects of product demand in the home market that, in essence, encourage home firms to be better prepared than foreign rivals with products and marketing approaches that meet the evolving needs of consumers. This is most obvious for a product for which home market demand precedes foreign demand, e.g. frozen livestock embryos in the U.S., drip irrigation equipment in Israel, durable high speed automobiles in Germany. Home market firms tend to gain international advantage from clearer and earlier perceptions of buyer needs, i.e. a first mover advantage. Rapid home market growth and saturation also figure in. Rapid growth reduces concern about investment redundancy, encouraging firms to expand and adopt new techniques and product innovations. Rapid home market maturity or saturation encourages firms to exploit foreign market demand and thus avoid subsequent investment redundancy; Japanese television receivers, for example.

3. *Related and Supporting Industries*. The third broad category of international competitiveness determinants is, existence of innovative and progressive supplier and related industries. The existence of leading Japanese firms in industries such as copiers, office machines, photographic equipment and telecommunications equipment contributed to the preeminence of Japanese firms in the facsimile industry, for example. Improved

coordination, joint problem-solving, exchange of research and development, and the evolution of a common pool of qualified employees are all resulting factors that can affect external market performance. Conceptually, this may be an "industrial endowment" equivalent to the factor endowment of neoclassical trade theory.

4. Firm Strategy, Structure, and Rivalry. This category deals with the structure and behavior of firms and industries. This is the domain of industrial organization, i.e. market structure and strategic behavior. Herein lies the strongest support for the contention that domestic competition enhances international competitiveness. To quote Porter, "Among the strongest empirical findings from our research is the association between vigorous *domestic* rivalry and the creation and persistence of competitive advantage in an industry" (Porter, p. 117, emphasis added). In essence, firms that were in domestic industries where the structure and organization encouraged competitive rather than collusive behavior were observed to have notably stronger foreign market positions than those not subject to intense or aggressive competition from domestic rivals.

By contrast, some argue that domestic competition is wasteful in that it leads to duplication and keeps firms from achieving scale economies necessary for success in export markets. Therefore, one or two firms should be chosen to be "national champions" with the scale to compete against foreign rivals; this is the so-called National Champion theory. However, few examples have been found of firms with unrivaled domestic positions that are competitive internationally, even though most such national champions are heavily subsidized and protected (see Adams and Brock, 1988, for example).

Intuition Linking Domestic Competition and Export Competitiveness

Given that at least casual, albeit considerable empirical observation suggests that domestic and foreign competitiveness are positively related, and given the lack of a theoretical foundation for such observation, I turn briefly to some intuitive insight for some reasons why. Again, I draw heavily upon Porter's work.

Intuition rests largely on the dynamics of competitive behavior, or rivalry among firms for domestic market share. The basic argument is, domestic competition creates pressure on firms to improve and innovate, i.e. to "up-grade" through such things as lowering costs, improving product quality and reliability, and creating new processes, products, varieties and applications. As firms become skilled at up-grading, they become more effective competitors in international as well as home markets.

The process of up-grading is aimed at creating advantages vis-a-vis competitors in the marketplace; while any such advantage may not be preserved, active competition stimulates up-grading from the fear of falling behind as well as from the cupidity of getting ahead. Thus it is a dynamic process by which firms continually strive to improve in order to gain and maintain competitive advantage. Successful firms, by virtue of survival and growth, are those that respond most effectively to the competitive pressure to up-grade.

While it might be argued that foreign firms can provide the same competitive stimulus as do home market rivals, it is contended here that domestic rivalry generates a greater competitive discipline. There are a number of reasons why domestic competition provides greater incentive for up-grading and aggressive pursuit of external markets than do foreign firms. First is visibility. Success by one firm demonstrates to others that success in

possible. Operating in a common market, bound together by common language and rules of commerce, makes it easier for one firm to observe what another did to up-grade; then to emulate and improve upon it. It facilitates competition for loyal ties with innovative suppliers, for employees with novel ideas and an established record of successful innovation, for "bragging rights" in the national media, among business contemporaries, and in the nation's securities markets.

Relatedly, it is more difficult to view domestic competition as "unfair", that is, created by subsidies, regulatory advantage or other national public policy. Home firms play by the same rules, customs and laws.

Second, vigorous local competition can encourage domestic firms to exploit foreign markets in order to grow. Particularly where economies to scale are significant, local competitors force each other to look abroad in order to achieve greater output and lower per unit costs. Firms can more easily become complacent with the home market when rivalry for that market is minimal.

Third, domestic competition may be an important source of incentives for firms to excel in utilizing national factor advantages, because competitors have access to these same advantages. Porter refers to such up-grading as the creation of *higher order* and ultimately more sustainable sources of competitive advantage. Without local rivalry, a firm in a country with factor endowment advantages may rest on those advantages rather than pressing forward with a continuing effort to improve; even worse, to use abundant factors wastefully.

Fourth, the dynamics of home market competition may also create advantages for the entire domestic industry that are external to the accounts of any specific firm. As firms in an industry try alternative ways of innovating and up-grading, the stock of knowledge and skill relevant to competitive advantage in this and ancillary industries expands. Because ideas tend to diffuse more rapidly within than across national boundaries, this contributes to the development of a new set of national factor advantages which, in turn, adds to the competitiveness of the nation's firms internationally. In a similar vein, aggressive competition among a group of domestic firms in a given industry often stimulates rivalry within supplier industries, as firms in those industries innovate and up-grade in order to more effectively compete for the down-stream business.

Thus, a number of ideas can be advanced as to why the process of domestic competition and rivalry makes for stronger, more aggressive competitors in international markets. A brief examination of conditions necessary to bring about such domestic competition completes the circle of logic.

Antecedents of Domestic Competition and Rivalry

The industrial organization literature is replete with discussion of the determinants of competition. Much of the focus is on the number and relative size or dominance of firms in a market, i.e. seller and/or buyer concentration, and on strategic behavior, i.e. the extent to which firms act cooperatively or independently in setting price and determining output.

Regarding the number and relative size of firms, it seems pretty well established that the perfectly competitive norm of a large number of relatively small firms is not essential; rather, a balance must be reached between few enough to achieve static economies of scale

and a sufficiently large number to generate the dynamics of competitive rivalry and minimize the opportunity for explicit or implicit cooperation. While there does not seem to be a magical minimum number of firms, it is possible to have "too few" for effective domestic competition and international competitiveness. The automobile industry is illustrative: prior to substantial investment in the U.S. by Japanese firms the domestic industry with three manufacturers was competitively ineffectual when compared to the Japanese industry with nine firms. It has also been established that dominant firms are seldom aggressive innovators (see Acs and Audretsch, 1987, for example).

A sizeable number of firms in an industry is not, in itself, sufficient to generate competition and rivalry. Direct cooperation or collusion among those firms must also be avoided. Not only does cooperative behavior result in resource misallocation in the neoclassical sense by restricting output and extracting rents, it also reduces or eliminates diversity, saps incentives for innovation, and in general slows the rate of industry up-grading and progressiveness. In short, as has been adequately demonstrated in the new industrial organization literature, domestic competition is a function of both industry structure *and* strategic market behavior by the firms therein.

Additional factors that affect domestic competition include the rate of new business formation and operating goals. In more traditional industrial organization terminology, the former is related to entry barriers while the latter addresses the economic motivation or objective of firms. New businesses are particularly important to the dynamics of competition because they have a strong incentive to succeed; thus they are more willing to try new methods, be more innovative, and find means of tapping new markets. New business

formations are a particularly valuable in this context, and generally seem to be most successful when spun-off from a good idea developed elsewhere, such as in a university or research laboratory, or when resulting from related diversification by a firm that possesses a base of relevant skills in similar or related industries, e.g. a consumer packaged goods firm moving into a new line of frozen food entrées.

The operating goal of firms may also be more important as a determinant of domestic competition that is implied by the convenient profit maximization assumption of microeconomic theory. Casual observation suggests that firms with an objective of revenue maximization subject to a minimum profit constraint are more aggressive competitors than are those driven solely by the pursuit of maximum profits. Or, perhaps a more dynamic way to frame this distinction is, a short-term vs. a long-term profit objective. Arguably, the latter is more compatible with substantial investment in research and development, an important ingredient in the competitive up-grading process. Porter, among others, has suggested that firm goals at least in part reflect national psychologies, e.g. sensitivity in U.S. securities markets to quarterly earnings reports in contrast to Germany and Switzerland where equity shares tend to be held more for long-term appreciation.

In short, industrial organization has much to say about domestic competition. To the extent that international competitiveness is predicated on competitive conditions and behavior in the home market, industrial organization and international trade become linked in a way not yet recognized in received microeconomic theory.

Supporting Evidence From the US Food Industries

In an attempt to test the domestic competition - external market performance hypothesis systematically, Stuart Frank and I regressed a number of indicators of industrial organization against export propensity for U.S. food manufacturing industries, using 1982 cross-sectional data defined at the 4-digit SIC level (Henderson and Frank 1991). Explanatory variables represented market power, product differentiation, economies of size, and entry barriers. Admittedly, some of the variables were incompletely specified, e.g. market power was measured as a function of the Herfindahl and an index of vertical tie-ins; no explicit measure of price-cost margins was available.

Results were highly significant, with an R^2 of 0.86 and an F-value of 8.4 for the estimated equation. The regression coefficients for the independent variables characterizing domestic competition--market power, product differentiation, and entry barriers--were statistically significant and *negative*, while economies of size were significant and positive. Currently, efforts are being made to up-grade this study to include an explicit measure of strategic behavior, 1987 data, and a broader geographical representation of food manufacturing firms. Similar findings of negative relationships between exports and home market seller concentration have been reported in a study of 35 Belgian industries by Glejser, Jacquemin and Petit (1980), and in the presence of complexity-based product differentiation in a study of 237 U.S. manufacturing industries by Koo and Martin (1984). I interpret these findings as highly persuasive toward the contention of this paper.

Implications

If the "Porter Paradigm" has validity, national pro-competition and antitrust policies help, and national champion or pick-a-winner policies hinder international competitiveness

and thus the structure of international trade. To be a bit provocative, whether that would mean that national pro-competition policies are trade-distorting, I leave to trade theorists to debate.

For the purposes of this discussion, the charge as I see it is to debate these questions:

1--Is there sufficient appeal to the hypothesis, Export shipments are negatively related to domestic market power", that, not only should empirical testing be advanced, but theoreticians be challenged to explain why,

2--To what extent has the external market explicitly been considered when a nation formulates its competition or industrial policy, and

3--To what extent *should* it?

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U.S. COMPETITIVENESS IN WORLD MARKETS: WHAT IS THE RELATIONSHIP TO U.S. ANTITRUST POLICIES?

by Bruce W. Marion[7]

The goal of this paper is to explore the interdependencies between U.S. domestic competition policies and this country's competitiveness in global markets. Some of the questions I've wrestled with include:

1. What are the U.S. competition policies and to what extent are they the result of concerns about international competitiveness? From the standpoint of those who enacted the U.S. antitrust statutes, did they expect these laws would affect U.S. imports or exports?
2. To what extent is there evidence of a linkage between competition policies and international trade? That is, regardless of the intent of competition policies, is there in fact a linkage between these policies and either imports or exports?
3. What are the interrelationships between competition policy and trade policy? To what extent are the two compliments, substitutes, or conflicting?
4. If Porter is right that competitiveness in domestic markets is one of the major determinants of competitiveness in international markets, what role has U.S. competition policy played in affecting the domestic and international competitiveness of U.S. industries?

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A. U.S. Competition Policies

The U.S. and Canada were among the earliest nations to enact antitrust laws. Background on the Sherman Act, the first of the U.S. antitrust statutes, indicates that international trade was an important consideration in the passage of the Act. In the 1880s, tariffs were a great national issue, and particularly tariffs in combination with trusts. The passage of antimonopoly legislation may have facilitated passage of the McKinley tariff in the same year. Pro-tariff Republicans (including Sen. Sherman), saw antitrust as an alternative way to ensure competition (Thorelli, p 219).

During the early years of the Sherman Act, international competition continued to play a role, particularly with regard to shipping cartels. And U.S. Steel, in the 1920 Supreme Court decision, successfully defended its mergers in part on the importance of the mergers for world trade (Stelzer, p. 21).

Although during 1890-1920 there was a modest linkage between competition policy and trade issues, this linkage became less apparent in later years. The primary focus of U.S. competition policies in the 20th century has been pretty squarely on U.S. consumers and U.S. markets.

In smaller countries like Canada and New Zealand, industries must be export oriented in order to have growth opportunities. It is perhaps natural that antitrust policies in these countries often reflect concerns about international competitiveness. Auquier and Caves (1979) conclude: "...that a nation exporting a large share of its tradeable goods production will be more tolerant of anticompetitive conditions, and will take more chances

of adverse spillovers to the home market when it sets rules for the operation of export cartels."

In the U.S., by comparison, industries and policy makers don't have to be internationally oriented. With the huge U.S. market, economies of scale or size are rarely a binding constraint for domestic firms. Size economies and growth can be achieved without participating in the markets of other countries. Thus, there is less of a tendency for U.S. antitrust policy to reflect concerns about international competition.

It may very well be that companies benefit from competing with foreign competitors--benefit, that is, in being forced to perform at a higher level than they would otherwise. In small countries that are export oriented, the companies are under more pressure to compete with global competitors. In large countries like the U.S., encountering global competitors in export markets is less essential. In these countries, import policies may be especially important since they may facilitate competitive encounters between domestic and foreign firms.

One of the purposes of U.S. antitrust laws is to protect and maintain effectively competitive markets. As the nature of markets has changed, both in the U.S. and globally, the interpretation of these laws has changed some to reflect more of an international focus. For example, we have seen people like the economist Lester Thurow and Secretary of Commerce Malcolm Baldridge call for a relaxation of antitrust laws for those firms and industries that compete in global markets.

Relative to competition policies in other countries, U.S. policy has placed more emphasis on:

a. Merger restrictions.

b. Per se treatment of price fixing and market allocation conspiracies and cartels. Historically, most other countries have judged these with rule of reason in which the gains are weighed against the losses. However, most other countries are moving toward per se rules.

c. Private antitrust litigation. Treble damages and liberal discovery laws make this more attractive in the U.S. During 1974-83, private cases in U.S. outnumbered public cases 14 to 1.

d. Market structure as a major determinant of competitive behavior. Other countries concentrate mainly on conduct and performance. Some have competition policies that allow direct intervention by the state if prices are judged to be exorbitant.

The antitrust policies of other industrial nations have generally gotten tougher over the last 20-40 years, particularly regarding mergers, cartels and dominant firms. During this period, U.S. policies have become softer. As a result, the antitrust policies of developed nations are now quite similar. Some of the countries that appear to be the most successful in international competition, like Japan and Germany, are also countries in which antitrust policies have become much stronger since World War II. This raises the question of whether domestic and international competitiveness may be influenced more by changes in antitrust policies than by the historical rigor of these policies. I will say more about this later.

U.S. competition policies have reflected a concern about international markets in at least two ways.

1st- In the enforcement of U.S. antitrust laws, international competition is sometimes considered. For example, if a relevant geographic market is global (e.g., the film industry), then antitrust investigations must assess the characteristics of appropriately defined global markets. In some instances, mergers have been defended on the basis that the merger will result in a U.S. company better able to compete with international competitors. For those products that truly operate in global markets, the combined effects of trade policies and competition policies must be considered.

U.S. competition policies also allow challenging competitive behavior by foreign firms that injure American consumers or the domestic operations of U.S. firms. State sponsored cartels are largely immune. However, a foreign cartel of private companies that ships goods into the U.S. is within the reach of U.S. law. Similarly, foreign firms that engage in predatory behavior in U.S. markets are subject to challenge, at least theoretically. In reality, the problems of obtaining information on foreign firms and concerns about comity and international relations result in few antitrust cases brought against foreign firms.

2nd- A few laws have been passed that exempt certain export oriented activities from the antitrust laws. These include the Webb-Pomerene Act of 1918, the Export Trading Company Act of 1982 and the National Cooperative Research

Act of 1984. The last two Acts were at least in part a response to the growth in foreign imports. Although none of these Acts have been heavily used by U.S. companies, Golden and Kolb (1983) argue they are alternatives to protectionist responses such as quotas, higher duties, export subsidies, etc.

Because these Acts attempt to deal specifically with factors affecting the international competitiveness of U.S. industries, we will review the evidence to date on the effects.

Export Cartels

Most countries allow export cartels. In the U.S., the 1918 Webb-Pomerene Act provided limited antitrust exemption for associations of otherwise competing businesses to engage in collective export sales. The exemption does not apply to conduct that has an anticompetitive effect in the U.S. or that injures domestic competitors of the members of Webb-Pomerene associations.

In 1982, the Department of Commerce was successful in encouraging Congress to pass the Export Trading Company Act. The ETC Act does not expand the scope of legal activities, but provides a vehicle to get the opinion of the Department of Justice concerning the legality of proposed export activities. The Act also clarifies the jurisdictional reach of the Sherman Act and the FTC Act regarding non-import foreign commerce. Thus, one purpose of the Act was to reduce uncertainty concerning the application of the U.S. antitrust laws to export trade.

Both of the above Acts apply only to export sales. They reflect a belief by U.S. policymakers that it is not the responsibility of the U.S. to protect foreign consumers or firms, and that U.S. firms should be allowed to compete on equal grounds with foreign firms

in foreign markets. The Webb-Pomerene Act was justified in part to permit small U.S. firms to penetrate foreign markets more effectively and secure economies of scale through coordinated marketing. The Webb-Pomerene exemptions have been little used. For example, only 1.5 percent of U.S. exports in 1982 were done by Webb-Pomerene associations (Davidson 1983).

The Export Trading Company Act has also had relatively little use. Export trade certificates of review called for by this Act are issued by the Department of Commerce (DOC) with the concurrence of the Department of Justice (DOJ). DOJ is mainly concerned about "direct, substantial and foreseeable effects" on competition that would harm U.S. consumers--that is, the "spillover effect."

As of 1991, only 130 trade certificates had been issued--covering roughly 5000 firms. DOC personnel report that most certificates are issued to single firm trade facilitators, not to collaborative groups of producers. Some certificates are also issued to trade associations but tend not to be used much by association members. Finally, there are several groups of collaborating firms that have obtained certificates. These tend to be marketers of relatively homogeneous products like cherries, raisins, rice and timber.

There probably is a learning curve in export markets. Thus, there may be some cost advantage from export cartels. However, there is a serious question about the compatibility of maintaining competition in domestic markets while allowing collusion in export markets. Auquier and Caves (1979) indicate: "The available case studies of U.S. industries confirm that collusion in export markets spills over to domestic markets."

Larson (1970) studied 47 Webb-Pomerene associations (involving 418 firms) from 1958-1962. Most of the firms involved were large (from Fortune 500) and from highly concentrated industries. Larson concludes that Webb-Pomerene has not accomplished its purpose of helping small firms compete more effectively in global markets. Rather he contends W-P associations have exacerbated the lack of competition in domestic markets. And, companies in W-P associations have often ended up conspiring with foreign firms and participating in international cartels.

Joint Ventures and Cooperative R & D

The U.S. antitrust laws have been relatively tolerant of legitimate efforts to collaborate in international markets. And, the Reagan and Bush administrations have promoted joint ventures and cooperation between firms that are perceived as beneficial to international competitiveness. For example, in 1989 Commerce Secretary Robert Mosbacher stated: "All American industries deserve the opportunity to form cooperative ventures that will enhance their international competitiveness without exposing themselves to unwarranted antitrust" (Adams and Brock, p. 436).

The National Cooperative Research Act of 1984 (NCRA) was enacted during a period of declining U.S. competitiveness. Advocates of the Act argued that cooperation among U.S. competitors would promote efficiency and meet the challenges of international competitors. The Act was consistent with the philosophy of the Reagan administration that government interference in markets should be reduced.

NCRA requires U.S. courts to judge the competitive effects of joint R&D under a rule of reason standard that balances the pro and anti competitive effects. Scott (1989)

questions the rationale behind NCRA, and the consequences of the Act. One rationale for the Act was that it would allow firms to appropriate the results of R&D. However, Scott's (1988) study of cooperative R&D projects filed under NCRA indicates that:

a. The ventures are occurring in industries that are more concentrated, that have relatively high productivity-growth, and that have high R&D intensity.

b. There is no evidence that cooperative R&D is in categories where there are significant appropriability problems.

Overall, Scott concludes that there is no evidence that NCRA has enhanced innovation.

Jorde and Teece (1990) argue that NCRA doesn't go far enough--that joint commercialization should also be allowed. They contend that Japan and the European Community take more lenient positions on joint ventures, including joint production.

Brodley (1990) disagrees, arguing that Japan rarely allows jointly owned production or marketing facilities. He contends that antitrust enforcement in the U.S. has not impeded innovation collaboration. The G.M.-Toyota joint venture is raised up as an example of joint production that was approved by the FTC, in part to encourage the diffusion of innovations from Toyota to G.M. Even joint ventures in selling are only challenged if concentration is very high.

Shapiro and Willig (1990) also disagree with Jorde & Teece. More than 50 production joint ventures involving at least one U.S. firm have been formed in each of the last few years. There is no evidence that such undertakings are more important in Europe or Japan. Shapiro and Willig conclude:

> ...there is precious little evidence that overly strict antitrust policies have stifled innovation by American firms or hindered American firms from

> competing abroad.... Indeed, rationally firm antitrust policies are likely to promote business efficiency...and thereby enhance competitiveness in global markets (p. 129-129).

Adams and Brock (1991) examine joint ventures in general, particularly their effects in petroleum, autos and airlines. Infatuation with cooperation was behind the cartel movement that occurred in the first four decades of this century. In the end this movement failed to achieve the benefits proponents had claimed; instead of boosting technological progress, cooperation retarded it. Adams and Brock conclude that there is no credible evidence that joint ventures are the keys for promoting efficiency, technological innovation or international competitiveness. In fact, there is considerable evidence to the contrary. They suggest that joint ventures should be subject to the same tests as mergers and acquisitions.

Overall, there is little evidence that legislation enabling export cartels/associations or cooperative R&D have had much effect one way or the other on U.S. competitiveness. These Acts have been little used, apparently because of the unwillingness of U.S. companies to work together. The lack of joint efforts by U.S. companies does not appear to be attributable to the antitrust laws.

B. Evidence of a Linkage Between Competitive Policy and International Trade

The unfavorable U.S. trade balance and the perception of declining international competitiveness of U.S. industries have led to proposals to soften the antitrust laws and have been factors considered in enforcement. For example, it is doubtful if the GM-Toyota joint venture would have been approved by the FTC had it not been proposed as a way of improving GM's competitiveness.

There is little evidence that U.S. competition policies have had a major impact on U.S. trade. However, in some industries, the inability of antitrust policy to correct entrenched monopoly power has probably had a significant negative impact on U.S. competitiveness. The U.S. auto and steel industries are cases in point. The lack of effective competition in these industries over several decades resulted in bloated costs, few innovations and non-responsiveness to customer preferences that made both industries vulnerable to the market penetration of foreign firms. Although the U.S. antitrust laws are generally viewed as being tougher than those of other nations during the first 75 years of the 20th century, they still are relatively impotent in being able to deal with entrenched concentrated oligopolies and dominant firms. Monopoly power, once obtained, is difficult to challenge. And as Adam Smith and Michael Porter have argued, monopoly is the great enemy of good management and of international competitiveness.

C. Interrelationship Between Competition Policy and Trade Policy

Trade policy and competition policy in the U.S. are often at odds. Trade laws tend to be used to protect U.S. companies and workers whereas antitrust laws focus more on protecting U.S. consumers. The Department of Justice and FTC have had little success in attempts to influence trade policies.[8] In some cases, freer trade can accomplish what antitrust cannot--infuse competition into an entrenched oligopoly or industry with a dominant firm.

The relaxation of antitrust enforcement during the 1980s appears to have done substantial harm. The deregulation of the airline industry was initially pro-competitive but

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[8] There has been some effort to encourage those administering trade policy to judge dumping by similar standards as predation, i.e., using a cost standard. At present, dumping may be found even though prices are above costs.

needed to be accompanied by strong antitrust to prevent the consolidations and joint ventures with foreign airlines that have now largely eliminated the benefits of deregulation.

Imports of autos, steel and consumer electronics have brought substantial benefits to American consumers. However, the enormous number of joint ventures between U.S. and foreign firms is moving the world markets toward tight oligopolies. Foreign competitors have been co-opted, at least to a degree. Thus, the benefits from liberalization of trade policy can be lost or reduced by unwise competition policy.

D. What Impact Has Competition Policy Had on International Competition? Is Porter Right?

Based upon his massive cross national study of competitiveness in 10 leading nations, Michael Porter concludes that competitiveness in domestic markets is one of the major determinants of competitiveness in international markets. In order to enhance domestic competition, Porter argues for stronger antitrust policies, not weaker. Porter's main conclusions regarding the factors affecting competitiveness are consistent with what we know about the factors affecting efficiency, progressiveness, costs and competition in domestic markets.

However, the proposition that tough antitrust policies enhances both domestic and global competitiveness encounters something of a historical paradox. For most of this century, U.S. competition policy has been stronger than that in other developed nations, ostensibly making U.S. companies better able to compete in world markets. Yet there has been growing evidence over the last 20-25 years that U.S. firms are less able to compete in world markets than Japanese, German and other foreign firms.

Part of the explanation may lie in the changes in the competition policies of other nations. In both Japan and Germany, cartels were permitted until World War II. In Germany, for example, there were 1000 cartels in 1922, 2500 in 1925 and the number peaked before World War II. After World War II, Germany put in place more stringent antitrust policies. By 1987, the number of "rationalization" cartels had dropped to 300.

Antitrust policy in Japan also became more similar to that in the U.S. following World War II. There, as in Germany, the change was at least in part aimed at breaking up concentrations of economic power and in part a way of penalizing the owners and managers of large industrial companies that were perceived by the U.S. to have encouraged and profited from the war. The change in antitrust policy in Japan and Germany after World War II has been credited with at least some of the substantial improvement in competitiveness that these countries have realized.

An additional explanation of the "paradox" is that after World War II, U.S. industries had relatively little competition in world markets. The industries of Japan, Germany and many European countries had been devastated by the war and went through a substantial period of rebuilding. When their industries were rebuilt, however, with state-of-the-art technology, they gradually began to challenge the dominance of U.S. industries. Thus, a major part of the apparent paradox may be attributable to the dynamics that affected Japanese, German and other foreign industries after World War II.

Yet another contributing factor is the differences in corporate control in various countries and the effect that has on management objectives. DeJong contends that the oligarchically structured Germanic and Japanese firms are virtually immune to hostile takeovers, are more long-run in orientation, and tend to maximize sales or sales growth.

In contrast, Anglo-Saxon companies (U.S. and U.K.) are mainly run in the interest of shareholders, are exposed to a relatively free takeover market, are short-run in focus and tend to profit maximize. And--being competitive in international markets is difficult without a long-run focus.

Finally, the rigor of antitrust policy may be an imperfect predictor of domestic competitiveness. History tells us that it took only a few years of lax enforcement to create a U.S. Steel, with 65% of the nation's steel making capacity at the turn of the century. Once formed, such a firm is relatively immune from the antitrust laws as long as it is reasonably cautious in its behavior.

In other industries like cigarettes, competition has largely been smothered by roughly 70 years of advertising and product differentiation efforts. Years of high advertising in an industry tend to be associated with high levels of seller concentration, high entry barriers and high price-cost margins (Connor et al, 1985).

Porter's hypothesis that domestic competitiveness is a major determinant of international competitiveness carries major implications for domestic competition policies. If Porter is correct, a major source of conflict in the goals of antitrust policy would be removed. Antitrust policy that promotes competition in domestic markets will also be consistent with competitiveness in international markets. But--that conclusion remains to be rigorously tested.

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