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Discussion Paper

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International Competition Policy and Economic Development

Frederic M. Scherer

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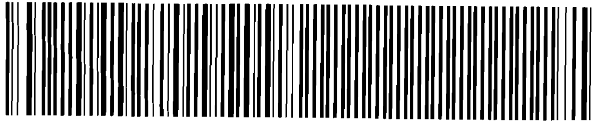

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Industrial Economics and International Management Series

International Competition Policy and Economic Development*

by
F. M. Scherer

Harvard University

May 1996

Abstract

During the past half century many nations have adopted policies whose function is to discourage cartels and other restrictive practices. Industrialized nations led the movement toward pro-competition policies, but more recently, developing nations have begun to join the parade. Initial steps have also been taken toward the implementation of competition policies spanning national borders, and proposals for their extension have been made. This paper analyzes the consequences national and international competition policies would have for developing nations. Topics covered include the dependence of LDCs on cartelized commodity exports, the terms on which intermediate goods and technology are imported by LDCs, access to the markets of industrialized nations, the consequences of substituting predatory pricing standards for the criteria traditionally used to combat dumping in international trade, and the links between domestic and international market structure and the absorption of advanced technology.

* Paper to be presented at the East-West Center Conference on International Trade Policy, Maui, Hawaii, USA, August 8, 1996.

1 Introduction

In 1995 the Treaty of Marrakech brought an expanded assortment of international trade and investment practices within a framework of widely accepted rules and dispute resolution mechanisms. Such an important accomplishment engenders two new and partially conflicting agenda items -- implementing what has already been achieved, and addressing important problems left unresolved. Among the matters left unresolved in the Uruguay Round were the interactions between international trade with labor standards, protection of the environment, and national competition policies. This paper addresses the question of competition policy, that is, norms delineating the extent to which business enterprises may depart from essentially competitive structure and conduct in their quest for monopoly advantage.

The literature on competition policies, national and inter-national, is vast. A relatively neglected topic, however, is the exploration of how multilateral competition policy rules might affect the economic prospects of less-developed countries. Acting on the physical principle that nature abhors a vacuum and the behavioral principle that fools rush in where angels fear to tread, I focus in this paper on the challenges that would have to be met in adapting international competition policy regimes to the needs of LDCs.

2 The Interface Between Trade and Competition Policies

The overriding objective of international trade policy during the past half century, if not longer, has been reducing barriers to the free flow of goods and services across national boundaries. Much has been achieved. The most dramatic illustration of the interdependence between trade policy and competition policy came with the formation of the European Common Market through the 1957 Treaty of Rome. As tariff barriers were reduced, anti-dumping mechanisms were phased out beginning in 1970. But to ensure that trade among Common Market member nations was not distorted, an active competition policy was considered essential. As a member of the EC Commission argued in the 1961 debate over proposed institutions to implement Community-wide competition policies:[1]

> It is ... beyond dispute -- and the authors of the Treaty [of Rome] were fully aware of this -- that it would be useless to bring down the trade barriers between the member states if the governments or private industry were to remain free through economic or fiscal legislation, through subsidies or cartel-like restrictions on competition, virtually to undo the opening of the markets and to prevent, or at least unduly to delay, the action needed to adapt them to the Common Market.

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[1] Speech by Hans von der Groeben, quoted in U.S. Senate, Committee on the Judiciary, Subcommittee on Antitrust and Monopoly, Hearings, Antitrust Developments in the European Common Market (USGPO: 1963), p. 96.

Among the monopolistic practices singled out in the Treaty of Rome as potentially inconsistent with the attainment of a true common market were inter-firm agreements and concerted practices affecting trade between member states (prohibited, with certain escape hatches, under Article 85) and the abuse of dominant market positions (covered by Article 86).

Monopolistic practices can distort international trade in a variety of ways. A main goal of GATT rounds beginning in the late 1940s and continuing through the 1970s was the reduction of trade-restricting import tariffs and quotas. But buyer cartels and vertical restraints that make it difficult for foreign firms to secure distribution channels for their exported goods have effects directly analogous to import tariffs and quotas. This is well recognized but continues to be a source of trading friction -- e.g., between the United States and Japan.[2]

On the other side of the tariff ledger there is an intriguing asymmetry. When an exporting nation supplies a sufficiently large share of total world output to influence the prevailing price appreciably, the imposition of an export tariff can alter the terms of trade in the exporting nation's favor, facilitating the collection of monopoly rents. Using tariffs to transform trade flows in this way appears to be rare, although exceptions exist.[3] Much more common, partly because it falls outside the scope of GATT rules but also because national governments are easily persuaded to let well-organized producer groups capture monopoly rents from foreign customers, is the formation of export cartels and the cultivation of national champion firms dominating export markets. Even in nations that have tough laws against cartels operating within their national boundaries, export cartels are typically exempted from the prohibitions. Thus, what is discouraged by trade policies thrives under chauvinistic competition policies.

When monopolies and cartels are permitted for some reason to operate within a national market, they often find it profitable to engage in price discrimination, among other things selling their output at lower prices in more competitive export markets than in the home market. Such dumping, of course, is the traditional bugaboo of international trade policy. Nations whose home ingustries have been injured by dumping often respond by

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[2] On vertical restraints, see my paper, "Retail Distribution Channel Barriers to International Trade," forthcoming in the proceedings of a November 1995 Columbia University Law School conference on The Multilateral Trade Regime in the 21st Century. On the trade-distorting role of buyer cartels in the Japanese cement industry, see Mark Tilton, Restrained Trade: Cartels in Japan's Basic Materials Industries (Cornell University Press: 1995), Chapter 4.

[3] See e.g. Sowah Anyetei, "An Econometric Analysis of Macroeconomic Policy in Ghana, 1956-69," Ph.D. dissertation, Northwestern University, 1980 (on cocoa bean taxes when Ghana was the world's leading supplier); and Joseph P. Kalt, "The Political Economy of Protectionism: Tariffs and Retaliation in the Timber Industry," in Robert E. Baldwin, ed., Trade, Growth, and the Balance of Payments (University of Chicago Press: 1988), pp. 339-368 (on lumber export tariffs imposed by Canada to settle a trade dispute with the United States).

negotiating with the exporting nations voluntary restraint agreements under which the exporters consent to raise their prices or limit their exported output.[4] To implement the VRAs, the exporting firms must find some way to apportion overall export quotas and/or to prevent the undercutting of agreed-upon price floors -- in other words, to form de facto export cartels. Or alternatively, the government of the exporting nation must assume the role of cartel manager. In either case, competition policy shortcomings lead to international trade policy actions, which in turn trigger further departures from the behavioral patterns competition policy supposedly encourages.

When a single firm has sufficient monopoly power to engage in systematic price discrimination across diverse nations, it has incentives to preclude the exportation (or re-exportation) of its products from low-price to high-price jurisdictions and hence to prevent arbitrage from enforcing the law of one price. Restrictive agreements confining distributors and dealers to assigned territories and preventing sales outside those territories can be used to enforce discriminatory market segmentation. In its efforts to perfect the Common Market, the European Community Commission has wielded its competition laws aggressively against such trade-distorting vertical restraints.[5]

3 The Spread of Competition Policies

Implementing aggressive policies to combat monopolistic structures and behavior was once a near-monopoly of the United States. Before World War II, most nations treated monopolies and cartels, domestic and international, with benign neglect, or e.g. in Germany and Japan, actively encouraged them.[6] In the years following World War II, a few nations enacted competition laws for the first time or, when weak laws already existed, strengthened them. The adoption of pro-competition policies then spread at an accelerating pace. Among the 24 nations belonging to the OECD in 1992, only three had by that time no pro-competition laws. The dismantling of the Iron Curtain precipitated a new flurry of enactments in former members of the Soviet bloc.[7] The Asian tigers and a

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[4] On the European experience, see Patrick A. Messerlin, "The EC Antidumping Regulations: A First Economic Appraisal," Weltwirt-schaftliches Archiv, vol. 125 (1989), pp. 563-587.

[5] A precedent-setting decision in the 1964 Grundig-Consten case prohibited restraints on the re-export of electronic equipment by Grundig's distributors in France. An important recent case involved Bayer's calcium-channel blocker drug Adalat (called Procardia in the United States). See the Commission Decision in re Adalat, Case IV/34.279/F3 (1995).

[6] For an historical review of policies in several leading nations, see F. M. Scherer, Competition Policies for an Integrated World Economy (Brookings Institution: 1994), Chapter 3.

[7] See e.g. Saul Estrin and Martin Cave, eds., Competition and Competition Policy: A Comparative Analysis of Eastern and Central Europe (London: Pinter, 1993); and Paul L. Joskow, Richard Schmalensee, and Natalia Tsukanova, "Competition Policy in Russia during and after Privatization," Brookings Papers on Economic Activity: Microeconomics (1994, pp. 301-381.

considerable number of less-developed nations such as India, Columbia, Mexico, and Kenya have also passed competition laws. The various national laws differ enormously in their emphasis, exempted practices, and the enthusiasm with which they have been enforced.[8] If the historical experiences of the United States, the United Kingdom, Germany, Japan, and the European Community are any guide, at least a decade must pass between the enactment of such laws and the time when serious, tough enforcement begins.

Excepting the European Common Market and a more limited bilateral harmonization between Australia and New Zealand, attempts to adopt multilateral competition policies spanning national borders have met with little success.[9] From the United Nations Conference on Trade and Employment in Havana during 1947 and 1948, a draft treaty called the Havana Charter emerged. It proposed the creation of an International Trade Organization with responsibilities inter alia for implementing Havana Charter Article 45, which stated:[10]

> Each Member shall take appropriate measures and shall cooperate with the [ITO] to prevent, on the part of private or commercial enterprises, business practices affecting international trade which restrain competition, limit access to markets, or foster monopolistic control, whenever such practices have harmful effects on the expansion of production or trade ...

The Havana Charter was not ratified, in no small measure because strong concern was voiced in the United States Senate that it would infringe too deeply on U.S. sovereignty. From the original Charter draft were extracted sections dealing with dumping and international trade-distorting subsidies, which became the basis of GATT in 1948.

An ambitious international convention on restrictive practices was endorsed by the United Nations Economic and Social Council in 1953 and ratified by seven nations before a U.S. decision not to ratify administered the coup de grace. Subsequent attempts by the United Nations and the OECD to secure acceptance of proposed multilateral competition codes have been equally unsuccessful. However, proposals (including my own[11]) for the

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[8] For OECD members, changes in law and important enforcement actions are tracked in periodic reports typically titled Competition Policy in OECD Countries (with covered years appended). No systematic compendium of the laws in less-developed nations appears to exist, although articles on specific nations' policies can be found in the numerous specialized journals treating competition policy issues.

[9] The material in this paragraph and the next is drawn from Scherer, Competition Policies for an Integrated World Economy, pp. 38-39.

[10] U.S. Department of State, Havana Charter for an Inter-national Trade Organization (March 1948), pp. 4-5.

[11] Competition Policies for an Integrated World Economy, Chapter 5.

harmonization of competition policies toward international transactions and the creation of enforcement mechanisms continue to be advanced. Most emphasize curbing export cartels and other border-spanning cartels with a direct impact on international trade. The renewed interest in multilateral measures is attributable in part to perceptions that the proliferation of national policies and the success of the Uruguay Round render competition policy harmonization both more feasible and more necessary.

4 The Special Needs of Less-Developed Nations

Less-developed nations have been slower than their already industrialized counterparts to enact laws seeking to maintain vigorous competition in their domestic markets. The arguments for and against pro-competitive policies within home markets overlap to some extent the considerations affecting LDCs' willingness to embrace international competition policies, which will be my main focus in what follows. It is nonetheless useful to identify at the outset some sources of internal tension. One can scarcely address the issues objectively without being the kind of two-armed economist at whom President Harry Truman once complained.

On one hand, because purchasing power is low, markets for many non-staple goods and services are characteristically thin in most less-developed nations. To achieve low-cost domestic production despite weak demand, a high degree of seller concentration, perhaps bordering on monopoly, may be necessary in industries subject to appreciable economies of scale. Even in highly industrialized nations, the fear that scale economies might be sacrificed has often kept strong anti-merger and monopoly divestiture provisions out of competition policy laws. In Sweden during 1967, for example, domestic demand was insufficient to support even a single plant of minimum efficient scale in three of the twelve industries (beer brewing, cigarettes, and refrigerators) on which I conducted a detailed inquiry. In four other industries (paints, glass bottles, steel, and storage batteries), the market could accommodate only one or two plants of efficient scale.[12] If efficient domestic production in such high-scale industries (and many others) is to be sustained, monopolistic market structure can scarcely be avoided.

On the other hand, if domestic producers are allowed to enjoy the fruits of a highly concentrated market structure by pursuing monopolistic pricing policies, resource allocation may be distorted, income distribution will be skewed, and perhaps most importantly, entrepreneurs may opt for a "quiet life" from which tight cost controls and vigorous innovation are absent. There is much to be said for bringing to bear upon concentrated domestic industries as much competitive pressure as is consistent with the realization of scale economies. One way to do so is to insist that when there is room for more than one producer in a given industry, the market participants be enjoined from

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[12] F. M. Scherer, Alan Beckenstein, Erich Kaufer, and R. Dennis Murphy, The Economics of Multi-Plant Operation: An International Comparisons Study (Harvard University Press: 1975), p. 94.

forming cartels, formal or informal, to suppress competition among themselves. Mergers among competing producers might also be prevented unless the would-be merger partners present compelling evidence that their integration will yield significant economies.[13] Thus, tough pro-competition policies can help cultivate efficient domestic enterprises.[14] The other way to do so is to keep import barriers as low as possible, forcing the small number of domestic producers to compete against efficient foreign suppliers. A necessary concomitant may be preventing domestic firms from collaborating in international cartels. One possible consequence may be the demise of domestic enterprises unfit for the competitive struggle, in which case severe conflicts between competition policy and industrialization goals may be faced. To these I return in a later section.

5 Commodity Cartels

For many less-developed countries, the export of primary agricultural or mineral commodities is the principal source of earnings from international trade. How such primary commodity trade would be treated under an international competition policy agreement would be of great concern. It is reasonable to believe that the leading oil-exporting nations would refuse to ratify a competition policy accord if they were deprived of the ability to participate in OPEC, however poorly adhered OPEC's price and quota agreements have been in recent years. Similar opt-out decisions could expected from Malaysia if it could not participate in a tin cartel, Jamaica to maintain bauxite cartel possibilities, Brazil to preserve coffee cartel arrangements, Ghana to maintain a cocoa bean cartel, Russia and South Africa to cooperate with the De Beers syndicate, and perhaps even Canada to maintain the possibility of uranium and potash cartels.

Accepting the premise that primary commodities were somehow different, the draft Havana Charter treaty included provisions to exempt from its main anti-cartel thrust intergovernmental agreements to set and stabilize the prices of primary commodities, defined as "any product of farm, forest, or fishery or any mineral" in its natural or

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[13] Interpreting such evidence is often difficult. See F. M. Scherer and David Ross, Industrial Market Structure and Economic Performance (3rd ed.; Houghton-Mifflin, 1990), pp. 186-188; and, on an early test of the U.S. Department of Justice merger efficiencies defense, F. M. Scherer, "Archer-Daniels-Midland and Clinton Corn Processing," John F. Kennedy School of Government case study C16-92-1126.0, Harvard University, 1992.

[14] This is an implication drawn inter alia from comparative research by Michael Porter, The Competitive Advantage of Nations (Free Press: 1990), pp. 117-124, 594-598, and 662-673; and Martin Baily and Hans Gersbach, "Efficiency in Manufacturing and the Nature of Competition," Brookings Papers on Economic Activity: Microeconomics (1995), pp. 307-358.

preliminarily processed form.[15] Such agreements would be authorized only when the International Trade Organization concluded that:[16]

(a) a burdensome surplus ... has developed or is expected to develop, which ... would cause serious hardship to producers among whom are small producers who account for a substantial portion of the total output, and that these conditions could not be corrected by normal market forces in time to prevent such hardship, because, characteristically ... a substantial reduction in price does not readily lead to a significant increase in consumption or to a significant decrease in production; or

(b) widespread unemployment or under-employment has developed or is expected to develop, which, in the absence of specific governmental action, would not be corrected by normal market forces in time to prevent widespread and undue hardship to workers.

A similar primary commodity exemption was proposed in Edward Mason's 1946 book, which anticipated and probably influenced the Havana Charter, because "output responds slowly to increased prices, but once expanded it is extremely difficult to contract," because resources are immobile, because workers' income depends directly upon prices, and because a large number of workers are employed.[17]

During the ensuing half century most economists have become skeptical of the argument that cartels have desirable market-stabilizing properties. It is far from clear that maintaining high prices stabilizes employment. And because cartels tend to collapse owing to buffer stock overhangs, chiseling, and induced new entry when output is severely restricted to sustain high prices, their ebb and fall actually adds to the longer-term instability of world markets. OPEC's massive price-raising in 1973-74 and the late 1970s contributed materially to the world-wide recessions of 1975 and the early 1980s and ultimately sowed the seeds of OPEC's subsequent ineffectiveness.

Several recent studies have implied that LDCs may be ill-advised in relying too heavily upon primary commodities as a foundation for economic growth, since the growth rate of real gross domestic product appears to be negatively correlated with the extent of reliance

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[15] U.S. Department of State, Havana Charter, p. 92.

[16] Ibid., p. 97.

[17] Edward S. Mason, Controlling World Trade: Cartels and Commodity Agreements (McGraw-Hill, 1946), pp. 36-37 and 141-142. Mason was the founder of the Harvard school of industrial organ-ization economics.

upon primary commodity exports.[18] However valid that warning may be, its caveat does not carry over to participation in primary commodity cartels, given a nation's reliance upon such commodity exports. The gross domestic product variable used to measure growth in those studies underestimates the attractiveness of (successful) commodity cartels in three ways. Real exports, which add to GDP, are presumably measured by deflating export shipments measured in monetary terms by an export price index. The more successful a nation is in raising its export commodity price, the more the measured GDP contribution of exports will diminish, ceteris paribus. Indeed, if the quantity of the commodity exported by a nation is restricted to raise export income, a correct accounting will show the cartelized export sector to be a drag on GDP. Second, the increased revenues from successful cartelization may be spent at least in part on increasing substantially the importation of goods and services that enhance consumers' living standards, but whose increase reduces measured GDP. Third, some of the revenue from cartelization may be invested abroad, earning rents that are subtracted from gross national product estimated to derive gross domestic product.

Thus, when less-developed nations believe that cartelization of primary commodity exports will be successful under at least some circumstances, they will be reluctant to ratify a multilateral competition policy treaty that prohibits all cartels in international trade. In my proposal for an international competition policy accord, I have dealt with this likelihood by allowing each signatory nation to exempt from the export cartel prohibition three industries, each defined no more broadly than a single four-digit SITC category.[19] As experience is gained with the new policy and international trade becomes increasingly free from cartel distortions, the exemption could be reduced progressively to two industries, then one, and in some distant future nirvana, to zero. The proposal to exempt a fixed number of industries was deliberately biased in favor of LDCs, whose exports are likely to be concentrated over a narrower array of industry categories than those of highly industrialized nations.

6 Competition Policy and Industrialization

We advance now to the question of how the efforts of LDCs to build industrial capabilities would be affected by a multilateral treaty extending pro-competitive rules more or less comprehens-ively to international trade. Such rules would operate on two relevant fronts: they would constrain the activities of firms at home in industrialized nations from whom LDCs buy and to whom they sell; and they would constrain the exporting and buying activities of enterprises at home within LDCs.

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[18] See e.g. Jeffrey D. Sachs and Andrew M. Warner, "Natural Resource Abundance and Economic Growth," Working Paper 5398, National Bureau of Economic Research, December 1995, and the other studies cited there.

[19] Competition Policies for an Integrated World Economy, p. 93.

6.1 Cartel Activity by Firms Based in Industrialized Nations

To the extent that the development of LDC industries depends upon the importation of raw materials, intermediate components (such as semiconductors), and capital goods from industrialized nations, curbing the restrictive practices of enterprises supplying those inputs would be beneficial. How large the benefits would be is difficult to judge.

During the 1920s and 1930s, multinational enterprises commonly agreed among themselves upon spheres of influence, designating specific customer nations or broader geographic areas such as South America or Southeast Asia as the exclusive market of a single enterprise.[20] In other instances, they colluded in setting prices, especially on sales in less-developed nations. Monopolistic restrictions were effected in third-party nations for such diverse products as basic chemicals, explosives, and dyestuffs; synthetic fibers and plastics, aspirin,[21] light bulbs, and heavy electrical equipment. Many of those cartel arrangements crumbled during the late 1930s when the United States began wielding its antitrust laws aggressively to challenge participation in them by American companies. Since the U.S. firms were key players, their abstention made it difficult for enterprises from more permissive national jurisdictions to sustain their collusion. There is evidence, however, at least for heavy electrical equipment, that cartelized price-raising continued after World War II in markets outside the United States, Japan, Western Europe, and the socialist bloc -- in other words, in an array of less-developed countries.[22] The extent to which such activities persist in secrecy today is unknown. It is almost certain that the volume of LDC equipment purchases affected is closer to zero than to the levels prevailing during the 1930s.

Most nations, it has been observed earlier, exempt export cartels formed among domestic producers from their competition policy prohibitions. Somewhat more is known about these formally exempted cartels, which must typically be registered with national authorities, than about sub-rosa cartels, which have probably been driven deep underground by the aggressive enforcement of national and EC competition policies. Intensified international competition has undoubtedly limited their impact. During the 1930s, export "associations" formed under the U.S. Webb-Pomerene law originated approximately 19 percent of U.S. exports.[23] By 1981, the number of Webb-Pomerene

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[20] See e.g. George W. Stocking and Myron W. Watkins, Cartels in Action: Case Studies in International Business Diplomacy (Twentieth Century Fund: 1946).

[21] See Charles C. Mann and Mark L. Plummer, The Aspirin Wars (Harvard Business School Press: 1991), especially Chapters 4-6.

[22] See U.S. House of Representatives, Committee on Interstate and Foreign Commerce, Report, International Electrical Association: A Continuing Cartel (USGPO: June 1980).

[23] For the sources of statistics cited in this paragraph, see Scherer, Competition Policies for an Integrated World Economy, p. 46.

associations had dwindled to 39, accounting for less than two percent of U.S. exports. In West Germany during the 1980s, 60 export cartels alleged not to have effects in the domestic market and four conceding domestic effects originated an estimated two percent of German exports. Roughly half of the Japanese export cartels registered in the early 1980s operated in the textile industry, which is sufficiently competitively structured internationally that appreciable price-raising consequences would not be anticipated. Canada maintains a cartel for the export (to markets other than the United States) of potash, an important fertilizer ingredient on which Canada's world market position is analogous to that of OPEC. To what degree competition from German, Russian, Ukrainian, Belarusan, and Israeli suppliers constrains its pricing is not known.

Cartelization could affect not only the supply of equipment and raw materials to less-developed nations, but also the supply of licensed technology. Many of the international cartels that thrived during the 1920s and 1930s were based upon patent and know-how cross-licenses among a few world market-dominating companies. These technology pools were for the most part broken up as a result of U.S. antitrust enforcement efforts. Whether technology is currently denied to LDC producers as a result of collusion is unknown, at least to this author. Alice Amsden reports that after Korea's Pohang Iron and Steel Company emerged as one of the world's most efficient producers by licensing Japanese technology, "Japanese steel makers [became] increasingly reluctant to transfer know-how to their erstwhile student."[24] Similar difficulties were reported as Korean companies moved to the frontier of integrated circuit manufacturing. In both cases, it seems clear, the Korean enterprises were able to circumvent the reluctance of some sources to supply technology by turning to other sources. Lenin may have been correct when he quipped that capitalists will sell the rope with which they are hanged.[25]

Especially in high-technology industries, individual firms may derive from patent rights and other first-mover advantages substantial monopoly power unlikely to be brought within the reach of any feasible international competition policy code. Intel's practices in the sale of its market-dominating IBM-compatible microprocessors provide an example.[26]

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[24] Alice H. Amsden, Asia's Next Giant: South Korean and Late Industrialization (Oxford University Press: 1989), p. 309.

[25] Technology licensing practices are the only domain in which the Marrakech Treaty authorizes competition policy actions by one nation against the enterprises of another nation. Article 40 of the Agreement on Trade-Related Aspects of Intellectual Property Rights states that "some licensing practices or conditions pertaining to intellectual property rights which restrain competition may have adverse effects on trade and may impede the dissemination of technology." It mentions as non-exhaustive examples exclusive grantback conditions, conditions preventing challenges to a patent's validity, and coercive package licensing. It does not explicitly cite refusals to license as a practice against which competition policy measures may be taken.

[26] The author was a consultant to Advanced Micro Devices, Inc., on U.S. and Taiwanese antitrust charges resulting from the practices described here. See Advanced Micro Devices, Inc., v. Intel Corporation, case no. C-91-20541JW, first amended complaint, March 8, 1994 (U.S. Federal

Intel attempted (in the end, unsuccessfully) to collect from Taiwanese computer assemblers a one percent patent royalty on their sales of computers embodying non-Intel microprocessors with Windows-compatible multitasking capabilities. Another strategy proved to be more resilient. Computer assemblers (Compaq excepted) both in the United States and East Asia who used competitive microprocessors in their computers were denied allocations of the newest and most powerful chips. This policy inhibited the computer makers' ability to design the most up-to-date computer models. Intel thereby made it difficult for competitive microprocessor makers to gain substantial sales even when they quoted prices below Intel's, which retarded their progress down learning curves and their ability to realize profits developing new chips. Taiwanese assemblers, most of whom lacked substantial brand-name recognition, were in turn inhibited in their attempts to embrace a possibly important cost advantage.

International competition policy codes reducing non-tariff barriers to maket access in prosperous nations could increase the export sales potential of less-developed countries' industrial enterprises in two main ways -- by curbing buyer cartels and by easing the restrictions resulting from incumbent manufacturers' control of distribution channels. That Japanese portland cement manufacturers have used their links with cartelized ready-mixed concrete and construction companies to restrain imports of Taiwanese and Korean cement has been documented by Tilton.[27] Most inter-national competition policy proposals would attack such buyer cartels along with sellers' export cartels. The control by incumbent manufacturers of difficult-to-replicate distribution channels poses more difficult problems. Allegations of import restraint through exclusive dealing relationships between Japanese manufacturers and their wholesalers and retailers have been the focus of particularly nettlesome disputes between the United States and Japan.[28] If U.S. merchandise has difficulty reaching Japanese retailers' shelves because of such practices, one might expect would-be exporters from less-developed nations to be at least equally disadvantaged. The difficulty is, there are often good efficiency-based grounds for exclusive dealing arrangements. Consequently, despite its generally tough antitrust policies, the United States treats "vertical restraints" within its domestic markets under a relatively permissive rule-of-reason standard. Writing more stringent standards into a multilateral competition policy code therefore seems improbable.

I conclude this survey by conceding that far too little is known about the benefits that might flow to newly-emerging LDC industries through the application of multilateral competition codes to industrialized nations' enterprises. Economic research by both government agencies and scholars on the scope and consequences of restrictive practices

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District Court for the Northern District of California); and "Intel Lawyer Commands Chip War," San Francisco Chronicle, June 28, 1993.

[27] Tilton, Restrained Trade, pp. 89-111.

[28] See Scherer, "Retail Distribution Channel Barriers to International Trade."

in world trade has fallen from fashion. Systematic research pooling the insights of knowledgeable industrialists, government officials, and scholars could provide the basis for better-informed judgments.

6.2 Cartels and Monopoly Among LDC Enterprises

Tough international competition codes would bite against the restrictive practices deployed by enterprises at home in LDCs as well as those from the industrialized nations. Would the consequence be the retardation or acceleration of LDCs' economic development?

Making the leap to modern products and production processes is not easy. Technology must be absorbed from abroad, and until a considerable amount of learning-by-doing has occurred, unit costs may (despite low wages) be higher than the prices at which comparable products are available from industrialized nations. During these early stages of production, it may be necessary to shield LDC firms from foreign competition. Advocating protective tariffs in the United States for precisely those reasons, the first U.S. Treasury Secretary, Alexander Hamilton, acknowledged in 1791:[29]

> There remains to be noticed an objection to the encour-agement of manufactures, of a nature different from those which question the probability of success. This is derived from its supposed tendency to give a monopoly ... to particular classes at the expense of the rest of the community, who, it is affirmed, would be able to procure the requisite supplies of manufactured articles on better terms from foreigners, than from our own Citizens ...
>
> It is not an unreasonable supposition, that measures, which serve to abridge the free competition of foreign Articles, have a tendency to occasion an enhancement of prices and it is not to be denied that such is the effect in a number of Cases.... [But] the contrary is the ultimate effect with every successful manufacture. When a domestic manufacture has attained to perfection, and has engaged in the prosecution of it a competent number of Persons, it invariably becomes cheaper.... The internal competition, which takes place, soon does away every thing like Monopoly, and by degrees reduces the price of the Article to the *minimum* of a reasonable profit on the Capital employed.

Pursuing such "infant industry" policies, rapidly-developing nations such as Japan, Taiwan, and South Korea have protected new industries behind relatively high tariffs until the producers are able to hold their own in international competition. Reducing such tariffs, often gradually, has been the task of the various early GATT rounds. But in addition, as one component of their export-led growth policies, Japan and South Korea in

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[29] Alexander Hamilton, "Report on the Subject of Manufact-ures," in Harold C. Syrett, ed., The Papers of Alexander Hamilton, vol. 10 (Columbia University Press: 1966), pp. 285-286.

particular have frequently accompanied tariff protection with permissive policies toward cartel formation and in some cases the support of monopoly positions in home markets.

There are three main rationales for such monopoly-friendly policies. As noted earlier, economies of scale may require high concentration of production within the home market. Second, concentrated, coordinated marketing might be more effective in conquering export markets than dispersed, scatter-shot efforts. They may also ensure that money is not "left on the table," i.e., that export prices are no lower than they need to be to meet competition in foreign markets. And third, the high prices and (less certainly) profits that can be gained through monopoly or cartelization at home can help subsidize the high costs of technology absorption, learning-by-doing, and product development that must be incurred if export markets are to be won. Each of these rationales merits fuller exploration.

First, however, an obvious point must be addressed. Holding prices at monopolistic levels in the domestic market while aggressively competing for orders in export markets is likely to be construed as dumping under either traditional Vinerian (net export prices less than home price) or newer constructed value (net export price less than average cost) criteria. If the penetration of export markets is sufficient to cause material injury, conventionally defined, to target market producers, either of two reactions -- one potentially favorable from the LDC's perspective, one less so -- can ensue.

The more favorable reaction is for the target nation's government to impose trigger prices or import quotas, requiring the exporting LDC to sell a smaller quantity at higher prices. As we have seen earlier, to achieve this, de facto cartelization of the exporting nation's industry, sometimes with the government acting as cartel master through quota assignments and monitoring, on other occasions through intra-industry coordination, must occur. Reconciling such trade-policy-induced cartelization with the prevailing norms of international competition policy poses difficult problems. Presumably, there would have to be "act of state" exceptions to the general presumption against export cartels.

The less favorable reaction is for the target nation to impose dumping duties on the exporting nation's shipments. If high costs are being absorbed through monopolistically high prices at home in order to subsidize exports, the imposition of dumping duties, combined with the prohibition of further sales at dumping prices, is likely to render the continuation of exports unprofitable, thwarting the LDC's export-led growth policy.

One way for the LDC seeking export-led growth to escape the second of these fates is to cartelize its export activities so that its industries' export prices undercut the prices prevailing in target markets minimally, causing no more than acceptable injury to target market producers. Japan's MITI apparently tried to thread the needle in this way when it orchestrated an export cartel among television producers (also cartelized at home), whose share of color TV set sales in the U.S. market soared to 36 percent by 1976. However, the Japanese producers chiseled on their agreement, undercutting MITI-authorized "check" prices intended to avert dumping charges. The ensuing dumping actions failed,

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however, because of gaps in U.S. trade law (closed through 1974 amendments). U.S. television makers thereupon sued their Japanese counterparts, alleging Sherman Act antitrust violations through cartelized predation upon the U.S. industry. Applying newly-defined criteria for determining whether prices were predatory (rather than the less tolerant criteria governing dumping disputes), the United States Supreme Court ruled that the Japanese TV makers' actions were not demonstrably predatory.[30] Thus, despite heavy litigation costs, the Japanese cartel strategy might be said to have succeeded.

It is unlikely that a similar strategy could succeed if there were internationally accepted rules against the cartelization of export activities, which would surely be the first priority of a multilateral competition policy code. But such a pact might open up a second avenue permitting LDC producers to charge high monopolistic prices at home, subsidizing lower prices in export markets, and still escape anti-dumping actions. If, as in the European Common Market, the rules of competition policy were to replace traditional anti-dumping rules in adjudicating trade disputes, producers in LDCs (and elsewhere) would enjoy much more leeway in pricing their exports.[31] A price less than the (monopolistic) home market price would not be construed automatically as a dumping price. And, in place of the constructed value rule -- net export prices may not exceed average total cost plus a normal profit margin -- the competition policy rule might permit export prices, consistent with rational price discrimination, to fall all the way to marginal cost.[32] Such a change would greatly facilitate the pursuit of export-led growth strategies by less-developed nations.[33]

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[30] Matsushita Electric Industrial Co. Ltd. et al. v. Zenith Radio Corp. et al., 475 U.S. 574 (1986). For an extended criticism of the Supreme Court's reasoning, see David Schwartzman, The Japanese Television Cartel (University of Michigan Press: 1993).

[31] This point is also made by Robert Z. Lawrence in "Competition Policies and the Developing Countries," working paper, John F. Kennedy School of Government, Harvard University, July 1995.

[32] Although the marginal cost rule has been applied most frequently in U.S. antitrust cases during the past two decades, there is continuing debate over its merits. See e.g. James D. Hurwitz and William Kovacic, "Judicial Analysis of Predation: The Emerging Trends," Vanderbilt Law Review, vol. 35 (January 1982), pp. 63-157; Kenneth Elzinga and David E. Mills, "Trumping the Areeda-Turner Test: The Recoupment Standard in Brooke Group," Antitrust Law Journal, vol. 62 (Spring 1994), pp. 559-584; and Jonathan B. Baker, "Predatory Pricing after Brooke Group: An Economic Perspective," Antitrust Law Journal, vol. 62 (Spring 1994), pp. 585-603.

[33] However, their adoption by nations as large as China and India is more problematic. Prime export target nations such as the United States almost surely have thresholds beyond which further, or more rapid, increases in modern manufactured goods imports will not be tolerated, and barriers under a Section 201 "escape clause" rationale will be imposed. Because Japan was the first major nation to pursue an export-led growth strategy, it reached critical thresholds only slowly. Because the Asian tigers were small, they too enjoyed a considerable grace period. But because imports have already reached substantial levels and because nations such as China and

Cartels among LDC manufacturers could facilitate export-led modernization drives in other ways. When plant-specific scale economies are important and least-cost plant capacity increments come in large lumps, tradeoffs may be faced.[34] If the LDC's industry contains several producers, each firm may fear that if all invest at the same time, the added output will drive export prices to unprofitable levels (or below dumping thresholds). Alternatively, each may be saddled with considerable costly excess capacity. As a result, each may choose to invest in smaller increments, sacrificing scale economies to avoid spoiling markets. Japan's MITI avoided this problem when steel producers were expanding rapidly during the 1960s by orchestrating a capacity expansion cartel.[35] MITI designated each company to build a big new blast furnace and ancillary steel-making facilities on a rotating basis, with the rotation timed to permit orderly market absorption of output lumps. When plant-specific scale economies are modest but strong product-specific economies exist, least-cost production may be facilitated through specialization cartels. In the Japanese ball and roller bearing industry, for example, each company was assigned by MITI to specialize in certain clusters of bearings whose potential production volumes were too small to permit efficient fabrication by more than one firm. For high-volume bearings with markets considerably larger than the scale of a single production line, on the other hand, no such product assignment restrictions were imposed.

These cartel measures probably contributed to the strong export market competitiveness of Japanese steel and anti-friction bearing producers. Their influence almost certainly spilled over into the realm of pricing.[36] Whether such cartels would be permitted under harmonized international competition policy rules is an important question. Many national laws exempt "rationalization" and "specialization" cartels from the prohibitions applied to price-fixing and related cartel behavior. Pressures to exclude them from a multilateral accord are likely to be powerful. For less-developed nations pursuing export-led growth (but not arguably for consumers in their home markets), exclusion would be beneficial.

India are capable of absolutely large export surges in short periods, tolerance thresholds will be exceeded much more quickly.

[34] See Scherer et al., The Economics of Multi-Plant Operation, pp. 35-48, 92-112, and 143-154.

[35] South Korea dodged the problem by concentrating most of its commercial steel production in a single firm, Pohang Steel. On the government's denial of construction permits sought by other Chaebols, see Junki Kim, "State-Owned Enterprise Sector Reform and Privatization: Theory and Some Evidence from Korea," Ph.D. disser-tation, Harvard University, 1996.

[36] On the cartelized pricing of Japanese steel makers, including measures used to exclude imports of lower-cost Korean steel, see Tilton, Managed Trade, Chapter 6.

6.3 Domestic Market Structure and Industrialization

Although export pricing policies embodying elements of collusion, dumping, or both, would be affected, it is unlikely that international competition policy rules would have much influence on the internal structure and conduct of emerging nations' industries. Nevertheless, it is worthwhile to digress and consider a final question of considerable importance -- how choices between monopolistic vs. maximally competitive industry structures might affect the speed at which LDCs' industries move to the frontiers of modern technology.

The paramount task for LDCs in the early stages of indus-trialization is absorbing technology already developed elsewhere in the world and implanting it firmly in local product designs and production processes. To absorb others' technology effect-ively, it must be recognized, it is essential to have a cadre of well-trained engineers, some of whom carry out threshold amounts of independent technical activity (i.e., "R&D").[37] But what must mainly be achieved is what economists studying technological change call "diffusion." There have been many empirical studies of the structural conditions within which diffusion proceeds most swiftly.[38] Several relevant findings emerge.

First, larger firms tend to adopt new technologies earlier than their smaller counterparts, although it is less clear whether, once initial adoption occurs, the new methods are used in a larger fraction of all production activities by large firms than by small firms. Second, the firm or plant size thresholds required for early adoption of a new technology are often modest. From a large survey of U.S. producers, Kelley and Brooks found, for example, that once firms employed 250 or more persons, the probability of having adopted numerically- or computer-controlled machine tools in 1987 reached 0.80.[39] Third, there is conflicting evidence on whether diffusion proceeds more rapidly when the technology-adopting industry is highly concentrated (i.e., with few producers and/or a high asymmetry of firm sizes) or more atomistically structured.[40] Finally, although firm size

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[37] See Wesley M. Cohen and D. A. Levinthal, "Innovation and Learning: The Two Faces of R&D," Economic Journal, vol. 99 (September 1989), pp. 569-596.

[38] For a review of the literature, see William L. Baldwin and John T. Scott, Market Structure and Technological Change (Harwood Academic Publishers: 1987), especially pp. 113-138.

[39] Maryellen R. Kelley and Harvey Brooks, "Diffusion of NC and CNC Machine Tool Technologies in Large and Small Firms," in R. U. Ayres et al., eds., Computer Integrated Manufacturing (London: Chapman & Hall, 199-), p. 118.

[40] New U.S. studies on this issue include Timothy Hannan and John M. McDowell, "Market Concentration and the Diffusion of New Technology in the Banking Industry," Review of Economics and Statistics, vol. 66 (November 1984), pp. 686-691; and Sharon Levin, Stanford Levin, and John Meisel, "A Dynamic Analysis of the Adoption of a New Technology: The Case of Optical Scanners," Review of Economics and Statistics, vol. 69 (February 1987), pp. 12-17.

and market structure matter, other organizational and sociological variables are at least as important. Kelley and Brooks report that for quite small firms -- i.e., those with fewer than 20 employees -- strong information networking links with machine suppliers, trade associations, customers, and rival firms compensated for most of the diseconomies of small size.[41] This last generalization almost surely applies with equal force to technology absorption in less-developed countries. South Korea, with very large firms and tightly oligopolistic industrial structures, and Taiwan, with many relatively small firms, have both exhibited high proficiency in absorbing state-of-the-art technology across a wide array of industries. Taiwan compensates for the size disadvantages of its industrial structure by maintaining large, competent industrial technology institutes charged with disseminating technology to domestic manufacturers.

Although exceptions exist (such as Indonesia's government-backed airliner development venture), less-developed nations are unlikely to take the lead in developing technologically advanced new products and processes. To the extent that they attempt to do so, certain generalizations will be relevant. Most fundamentally, there is a pervasive duality in the structural requisites for rapid technological progress.[42] On one hand, vigorous rivalry stimulates industrial innovation -- at least, within limits. But on the other hand, if too many firms compete in a given innovative domain, the market each is able to tap may become so fragmented and small that no firm will find investment in innovation profitable, and so the market for innovations will fail. How many firms constitute "too many" depends upon both demand and supply-side considerations. On the supply side, the costs of carrying out new product R&D vary widely from product to product. The distribution of required R&D outlays has its highest density at quite modest R&D investments, but it has a long thin tail into the billion-dollar projects.[43] Firms in newly-industrializing nations would be well-advised to concentrate their efforts on developing products for which the required R&D investments are modest. On the demand side, for a given required R&D investment, the larger the relevant market is, the more firms there can be vying to win a leading position through innovation without spoiling the prospects for profit. The easing of tariff barriers and improvements in transportation have already made it possible for would-be innovators at home in relatively small nations to see the whole world as the market for their innovations. To the extent that harmonized international competition policies reduce trade barriers incrementally, the market frontier will be extended even more. In this respect too, less-developed nations could benefit -- although, given their comparative disadvantage in high-level technical talent endowments, the gain is likely to be small.

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[41] Ibid., p. 125.

[42] See Scherer and Ross, Industrial Market Structure and Economic Performance, pp. 630-660; and Baldwin and Scott, Market Structure and Technological Change, pp. 18-113.

[43] See F. M. Scherer, "Schumpeter and Plausible Capitalism," Journal of Economic Literature, vol. 30 (September 1992), p. 1428.

7 Conclusion

To sum up, extending competition policy rules to a world-wide trading arena is likely to yield a mixed array of benefits and costs for less-developed countries. Most prominent on the cost side would be any flat prohibition of the commodity export cartels upon which many LDCs relay for export earnings. To induce LDCs' participation, some exceptions to the general presumption against cartels would be necessary. Less-developed nations would benefit most from an internationalization of competition policies if, as in the European Common Market, predatory price standards replaced the dumping criteria traditionally governing price discrimination in international trade. LDCs would also gain, most likely only modestly, from expanded prohibitions against cartelization of raw materials, component, capital goods, and technological know-how supplies among the leading firms from industrialized nations and by tougher restrictions on import cartels and distribution channel preclusion in important potential markets. If progress is to be made toward the harmonization of international competition policies, the special needs of LDCs can surely be accommodated. This paper provides, I hope, a rough preliminary guide to the issues that will be have to be addressed and some possible means of resolving them.