

SPECIAL PAPERS IN INTERNATIONAL ECONOMICS
No. 10, NOVEMBER 1974

INTERNATIONAL TRADE,
INTERNATIONAL INVESTMENT,
AND IMPERFECT MARKETS

RICHARD E. CAVES

INTERNATIONAL FINANCE SECTION
DEPARTMENT OF ECONOMICS
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PETER B. KENEN, Director
International Finance Section

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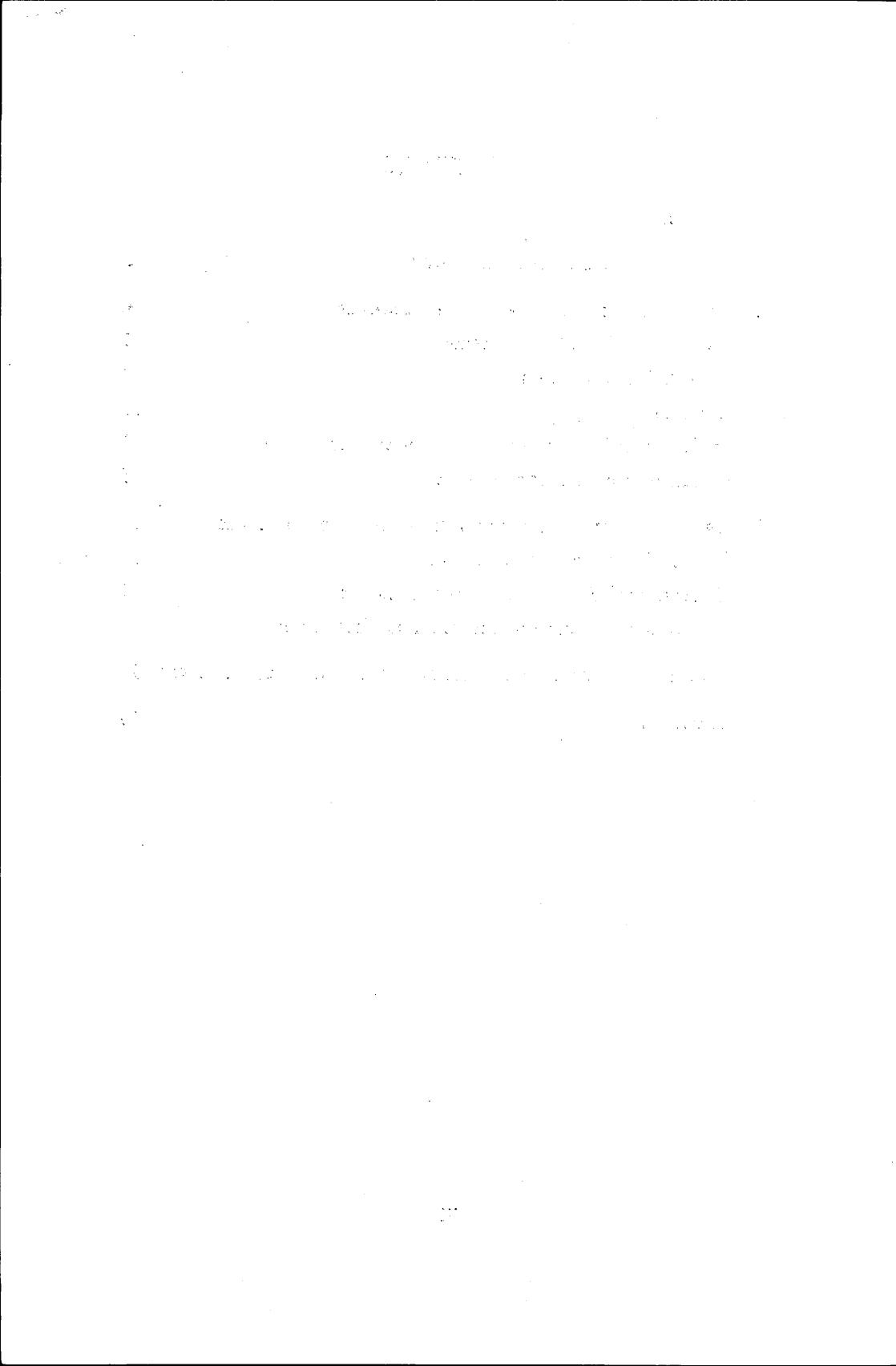
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PREFACE

Much of the toil of my professional career has been in the vineyards of international trade and industrial organization. Until a few years ago these two branches of economics remained in sanitary isolation from each other—in my own thinking, and in that of nearly all other practitioners. Yet the intellectual costs of this *cordon sanitaire* kept appearing on the accounts. Why should research on industrial organization assume that markets always stop at national boundaries? How can international economics continue to ignore all microeconomic market imperfections? How can we light our way to understanding foreign direct investment with general-equilibrium theory for a lantern?

Several years ago, my research turned to the multinational corporation as a prime fugitive through the intellectual cracks between international trade and industrial organization. And I found myself in contact with other congenial research projects. Doctoral dissertations by William James Adams, Javad Khalilzadeh-Shirazi, and Robert T. Kudrle were delving into the effects of foreign trade on industrial organization and performance. Thomas Horst's research on the multinational company has run parallel to my own and supplied a continuing stimulus. And my bouts of recurrent Canada-watching have yielded nuggets of insight.

This essay, which has its origins in the Graham Memorial Lecture at Princeton University, attempts a brief statement of the interrelation of international trade and industrial organization as it appears to me today. I have tried to advance a loose-knit but flexible conceptual framework suited to the problems of empirical research. I have given some attention to the normative issues that arise when one contemplates industrial organization in an open economy. And I have sought to identify, doubtless with many oversights, some of the more fruitful research in this field. I am grateful for the honor of delivering the Graham Lecture as an occasion to gather these thoughts between covers. Thanks for stimulus and suggestions go to Michael E. Porter as well as those named in the preceding paragraph.

R. E. C.



International Trade, International Investment, and Imperfect Markets

The theory of international trade, like most general-equilibrium theory in economics, has depended heavily on the assumption of purely competitive product and factor markets for determinate positive results and simple welfare rules. The field of economics that studies actual product markets—industrial organization—by contrast takes an empirically oriented approach to its subject matter, eschewing general equilibrium and depending heavily on made-to-measure varieties of oligopoly theory.¹ The two subjects have never surveyed and recorded their common boundary. The problem is not one of disputed territory, but instead of a no-man's-land where important empirical phenomena have escaped capture by either side.

Among contributions to the theory of international trade that bear some relevance to the structures of multiple product markets, Frank Graham's model stands out. But Graham, like his programming progeny, needed the assumption of pure competition to obtain determinate results. In a sense, Graham's approach should have been more fruitful than it has been for empirical research in international economics. The world *does* contain n commodities and m countries, not two and two. Yet the development of theoretical research along this line since Graham (McKenzie, 1968), whatever its formal delights, has been fairly unproductive—except of cautions and warnings—for research into the causes and effects of the actual structure of trade. Instead, in response to the challenge of empirical explanation, we have the “new theories” of international trade, which steal into the microeconomic territory of industrial organization and quietly jettison the

¹ The reason for this will prove important to the discussion that follows. Traditional oligopoly theory, from Cournot and Bertrand to the theory of games, begins with cognitive and motivational assumptions that cannot be verified directly. Although testable assumptions are not always necessary for a fruitful theory, the combination that traditional oligopoly theory offers of nonoperational assumptions and indeterminate results leaves the empirical researcher with a nearly empty tool box. Specialists in industrial organization have tried to derive their theoretical predictions from observable and stable market characteristics—market structure rather than business behavior. For examples, see Bain (1968) and Stigler (1964).

assumption of pure competition without being very explicit about what they are putting in its place, or what the general-equilibrium and normative implications of that substitution might be.²

In light of the poverty of assistance forthcoming from international economics, this essay takes its viewpoint from the field of industrial organization. That field's research strategy is organized around the question: What elements of market structure are associated with good qualities of market performance? To address that issue, I shall try to build the forces of foreign trade and investment into the framework of concepts often used in industrial organization. The first section sets the scene by defining the gains from trade when monopoly is present. The second incorporates international trade into the analysis of market performance, and the third adds the role of foreign direct investment and the multinational corporation.

I. GAINS FROM TRADE WITH MONOPOLY

Assume that a small country can produce two products, food and clothing. Its factor markets are competitive and externalities are absent, so it operates at some point on its production-possibilities curve TT , in Figure 1. In the absence of trade and with both industries competitive, production and consumption would take place at C_1 . When exposed to world prices indicated by the slope C_2P_2 , the country's tastes, technology, and factor endowment are such that it will export clothing. Suppose now that the food industry is monopolized. In the absence of trade, food output will be restricted and clothing output expanded, so that production takes place at a point like P_0 or P_0' . The elevated domestic relative price of food might be as shown by the lines intersecting at those points and tangent to social indifference curves that lie below y_1 (tangent to TT at C_1). When the economy is opened to trade, the monopolist must choose the most profitable output attainable at the new world prices; he becomes a price taker and behaves no differently from a competitive industry.³ The increase in real income following the opening of trade, to the indifference curve y_2 from the indifference curve tangent to the intersecting line at P_0 or P_0' , consists of two components: the conventional gain from trade (y_1 to y_2) and the gain from forcing the food monopolist to stop restricting output (P_0 or P_0' to y_1). Notice that food output may either contract or expand when trade is opened, because the pre-trade monopoly-

² These models are surveyed by Johnson (1968); the most comprehensive empirical application is Hufbauer (1970).

³ Notice the assumption that the number of producers operating in an industry makes no difference for its cost function.

ridden output could be either P_0' or P_0 .⁴ The domestic price of food of course falls.

FIGURE 1

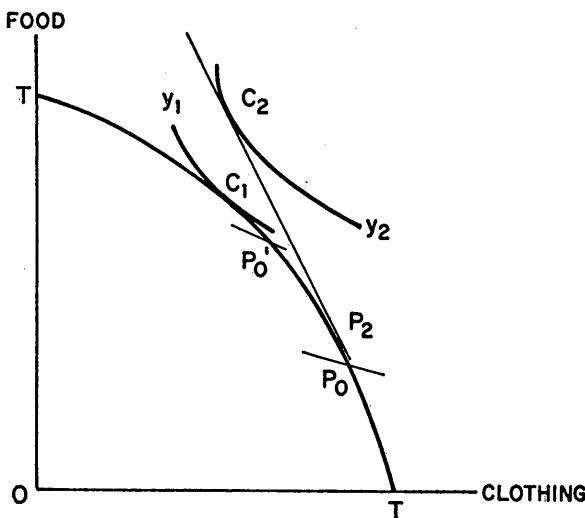
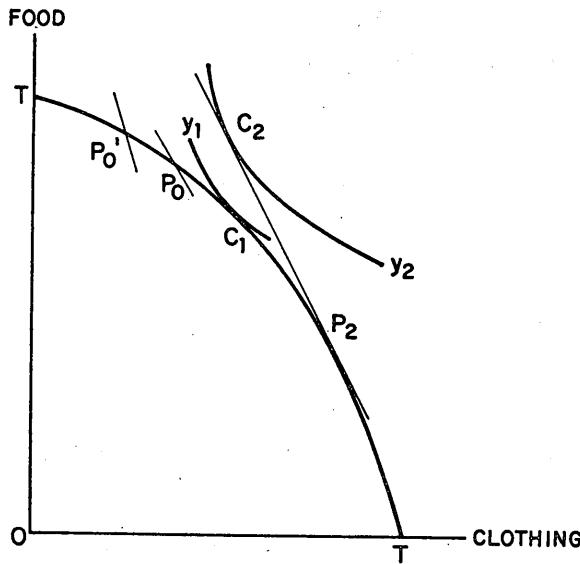


Figure 2 shows the effects of exposing a monopolist to trading opportunities when his industry is the potential exporter. Because we assume no transport costs or tariffs, so that the exporting monopolist must sell at the same price at home as he does abroad, this case turns out to parallel closely that of Figure 1. That is, the social gains from exposing a monopolist to export opportunities are conceptually like those from confronting him with import competition. Figure 2 matches Figure 1, except that it supposes the clothing industry to be monopolized. In the absence of trade, production of clothing at a point like P_0' or P_0 will be less than it would be (at C_1) if both industries were competitive. Opening the economy to trade makes it profitable for the clothing monopolist to expand output to P_2 and sell at price-ratio C_2P_2 both at home and abroad. Once again, the associated increase in real welfare combines the conventional gains from trade when all markets are competitive (y_1 to y_2) with the gain from forcing the monopolist to cease producing an output the marginal opportunity cost of which is less than its social marginal value (P_0 or P_0' to y_1).

⁴ Various writers have shown that in partial equilibrium we cannot predict the direction of change of an import-competing monopolist's output when impediments to trade are changed (see Vicas and Deutsch, 1964; Finger, 1971).

Notice that the domestic relative price of clothing may either fall (P_0') or rise (P_0), although the quantity of clothing produced definitely increases.⁵

FIGURE 2



II. FOREIGN TRADE AND MARKET PERFORMANCE

Using simple assumptions, the preceding analysis identified conditions under which threats or opportunities in the international economy would put an end to monopoly rents without altering monopolistic market structures. Considering the ingenuity that has been expended—fruitlessly, in my view—on concocting statistical or theoretical reasons why concentrated industries may not distort the allocation of resources, it is surprising that this line of attack has not proved popular.⁶ But the theoretical argument also makes it surprising that

⁵ For a somewhat simplified partial-equilibrium analysis of these cases, see Caves and Jones (1973, pp. 206-210); for further general-equilibrium results, see Melvin and Warne (1973). The partial analysis has the attraction of isolating possible consequences for the producer's surplus. By dealing with increasing costs in general equilibrium, the present text also neglects certain welfare problems that arise in the decreasing-cost case.

⁶ But cf. Stigler (1942, p. 7) and Weston (1953, pp. 114-115).

economists have scored fair success in finding statistical associations between allocative inefficiency (measured by excess profits) and the structural and behavioral determinants of access to monopoly rents (Comanor and Wilson, 1967), without taking international factors into account. Such results—mostly for U.S. manufacturing industries—indicate that international trade is not a sure cure for distortions in the national product market. On the other hand, recent research has suggested that trade variables can, in fact, add handsomely to our ability to explain the incidence of both allocative distortions (hereafter *allocative inefficiency*) and technical inefficiency (lack of cost minimization, e.g., owing to inefficiently small plants). The balance of this paper concentrates on generating explanations of how interindustry differences in international market forces can be expected to relate to differences in these dimensions of social performance. A principal result is that *the constraints which international trade and international investment impose on the price-quantity nexus chosen by producers function as substitutes for one another, and we can predict theoretically which is likely to be the strongest in a given market.*

Trade and Allocative Efficiency

The theoretical findings of section I immediately provide the result that either import competition or export opportunities tend to hold an industry's activity level to a competitive outcome. Which force is operative depends on where comparative advantage locates an industry's unit costs of production relative to the world price. There is no obvious reason to suppose that these unit costs are generally influenced by the structures of markets (cf. Pagoulatos and Sorenson, 1973), although I shall show below that international competition can influence unit costs by affecting the degree to which economies of scale are exploited.

The effects of import competition and export opportunities in practice can diverge substantially from the restricted theoretical model of section I. In that model, imports selling in the domestic market at the world price were subject to no systematic disadvantages—barriers to entry—relative to domestic import-competing sellers. Firms with established markets elsewhere in the world can potentially avoid two of the standard sources of disadvantage to market newcomers—the need to produce large quantities in order to reap substantial scale economies in production (relative to the national market) and absolute-cost disadvantages. (They may not avoid the third—product differentiation—as we shall note below.) The landed price of imports

is not simply the world price, however. It will be elevated by transport costs⁷ and by tariffs and related artificial impediments to trade, and these should thus be positively related to the excess profits that can be earned in the domestic market, *given* the level of domestic unit costs. But the positive relation is a contingent one. Tariffs and transport costs drive a wedge between the external and domestic price, but an industry with high unit costs may still be left with little opportunity to elevate price above cost.

Empirically, these factors of comparative advantage, transport costs, and tariffs have been found to be significant deterrents of excess profits when wrapped up in a composite proxy, the ratio of imports to domestic shipments (Esposito and Esposito, 1971; Khalilzadeh-Shirazi, 1974; cf. Jones, Laudadio, and Percy, 1973). This variable is not a very accurate specification of the underlying forces. What should constrain the profits of import-competing producers is not the market share held by imports but the responsiveness of their supply to an increase in the domestic price above the competitive level. A small share *ex post* could be associated with an elastic supply of imports, and hence a "limit price" allowing little permanent excess profit.⁸ Considering that the industries for which we have data are at least somewhat heterogeneous, however, the successful performance of the import-share variable grows more plausible, according to the following argument: Some well-defined products (hereafter *subproducts*) classified to an industry have no close importable substitutes, while others are subject to high cross-elasticities with respect to the prices of imports and face varying amounts of actual import competition. The import share, as a weighted average of these situations, probably reflects the prevalence of subproducts with close importable substitutes. An analogous argument might hold for the height of effective tariffs as a hypothetical predictor of excess profits for protected producers. The higher a tariff, the more likely is it to prohibit imports entirely (even at a price that maximizes the profits of domestic sellers). Against this argument run two other possibilities, however. First, tariffs may be set at a level designed to ensure the existence of a domestic industry; their relation

⁷ International transport costs need not exceed those for domestic shipments, and in some U.S. industries imports dominate coastal submarkets but not inland markets. On the other hand, international transport costs can be thought of as including extra real resource costs of transfer due to differences in language, legal system, product standards, etc.

⁸ Vicas and Deutsch (1964) have pointed out, for instance, that an import-competing monopolist can be forced to price at marginal cost by a government that stands willing to subsidize imports by the excess of their c.i.f. price over the monopolist's marginal cost. No actual imports need enter for the policy to be effective.

to domestic unit costs would then be systematic, and their height might be unrelated to the potential profits of domestic sellers.⁹ Second, data available on tariffs by domestic industrial categories are averages that seldom have the appropriate weights, i.e., the outputs of the protected subproducts that would be observed with competitive markets and free trade (Preeg, 1970, Appendix A). These problems may explain the negative results reported by McFetridge (1973).

I argued in section I that, on certain assumptions, export opportunities are symmetrical with import competition in constraining allocative inefficiency. The argument from the monopoly case is equally plausible for the case of oligopoly,¹⁰ where it suggests that the presence of an alternative export market renders sellers less conscious and solicitous of their mutual dependence in the domestic market, and hence less likely to effect a collective restriction of output. But the assumptions for this result are far less innocent than those generating the same prediction for imports. Ruling out transportation costs is particularly suspect, for a margin equal to twice international unit transport costs (perhaps plus tariffs as well) protects a collusive export industry that sells at home at a price higher than the "world" level.¹¹ The familiar geometry of "dumping" shows that, with non-decreasing average unit costs, the domestic price is apt to increase with the introduction of trade if the world demand curve is more elas-

⁹ Macdougall (1951, p. 704) found this pattern in pre-World War II U.S. tariffs.

¹⁰ The following analysis turns at several points on the consequences of confronting oligopolistic firms with a perfectly elastic demand curve. Hence, we should note how this maneuver will affect their profit rates. A firm having market power in its domestic sales expands its output to the point where the *marginal* rate of return on capital equals the opportunity cost of capital, at which point any monopoly rents leave the *average* rate above that opportunity cost. If export opportunities permit the firm, now acting as a competitive price taker, to expand foreign sales at a rate of return equal to or above the opportunity cost of capital, it will do so until rising marginal costs (or general-equilibrium changes in factor costs) make further expansion of exports unprofitable. In the process, its average rate of return could be drawn down; while total profits increase, the lump of profit from domestic market power is now averaged in with export activities yielding no such lump. The argument in the text emphasizes conditions whereby export opportunities might shrink domestic monopoly profits, but this effect is actually not necessary to a prediction that the export share of a firm's business is negatively related to its average rate of profit.

¹¹ Domestic price can exceed the f.o.b. revenue from a foreign sale without making arbitrage profitable. Another force works counter to any tendency of firms with extramarket opportunities to be less collusive in their home market. Evidence is accumulating that the "deep pocket" a firm acquires through diversified activities in markets other than the one under scrutiny tends to raise the excess profits earned in this base market. The mechanism at work is presumably that the "deep pocket" and the chance to conceal excess profits in a consolidated income statement deter new entry and perhaps discourage the expansion of small firms (see Rhoades, 1973).

tic than the domestic one. Like other forms of discrimination, dumping tends to increase profits.¹² I shall argue below that this outcome is theoretically likely even when oligopoly spills across national boundaries.

The theoretical predictions about the effect of export opportunities on allocative efficiency thus are not clear. One test, based on an international sample of large firms in selected industries, confirms the negative relation derived from the simple model (Adams, 1973, Chap. 7).¹³ The other, which studies the determinants of price-cost margins in U.K. manufacturing industries, uncovers a significant positive influence of the share of industries' outputs exported on their rates of profit (Khalilzadeh-Shirazi, 1973, Chaps. 1, 2). Its author offers as a possible explanation the greater riskiness of foreign than domestic trade owing to higher information costs, risks of exchange-rate variation, and risks of adverse actions by foreign governments. This uncertainty could drive up the supply price of capital and thus the rate of profit.¹⁴

Product Differentiation

An important conclusion of research on industrial organization is that the elements of market structure interact in determining profit rates and other measures of performance (Gale, 1972), and this finding extends to the role of international trade. Surely its principal interaction is with the structural trait of product differentiation (itself an amalgam of intrinsic traits of the product and past behavior of its producers). Product differentiation generally reduces the sensitivity of producers' market shares to variations in others' prices, diverts rivalry into nonprice forms, and contributes importantly to the creation of barriers to the entry of new firms. It has been widely suggested that product differentiation is somewhat specific to national markets, so that the varieties turned out by producers domiciled in one nation will be closer substitutes for one another than for differentiated

¹² Basevi (1970) shows that it can do so even if exports are sold at a price below pre-trade average cost (see also Frenkel, 1971; Pursell and Snape, 1973).

¹³ The same result appears in preliminary work on the French manufacturing sector by F. Jenny.

¹⁴ Also, it is possible that the comparative-advantage patterns of some countries, including the United Kingdom, allow exports to be dominated by products whose market-structure traits tend to support excess profits. If the hypothesis of a general negative relation between export opportunities and profit rates is valid, one would expect the "perverse" relation to be weaker in the more highly concentrated U.K. industries, and that is in fact the case. It is also worth noting that export opportunities seem to be associated with larger plant scales in those U.K. manufacturing industries where the diseconomies of small-scale plants are particularly important.

varieties originating in other countries. Differentiation may respond in some measure to national character, the physical environment, and the "public good" components of national conventions and habits. Even so, the producer who has differentiated his good successfully at home must enjoy some advantage for doing so abroad. Differentiation must supply most of the underpinning of Burenstam Linder's (1961, Chap. 3) proposition that a producer must establish himself in a domestic market before he can export successfully (cf. Hsu, 1972). On the other hand, the novelty value of imports may give them a product-differentiation advantage in some markets, at least for claiming small market shares. If the former proposition holds, it implies that domestic producers in differentiated industries will face less effective import competition (given the relative costs of production) than if the product were undifferentiated. Likewise, potential exporters of differentiated goods face the need to make additional investments to establish their intangible assets of "brand image" abroad, even though the prior establishment of such assets at home greatly facilitates that task. Therefore, the predicted role of both import competition and export opportunities in constraining market distortions should be weakened when differentiation is present.

The evidence from the effects of import competition on U.S. industries is rather mixed.¹⁵ In the cases of U.K. industries, it runs in the right direction but is not strong.¹⁶ Some potent evidence does appear, however, in the relative size of the discounts offered by various Indian exporters of manufactured goods from the prices of competing wares; differentiated products, as our hypothesis predicts, take a larger discount relative to physically similar goods produced in industrial nations and enjoying stronger reputations (Frankena, 1973).

Recent research by Porter (1973) has shown that important structural differences appear among the products that we usually consider differentiated, and these differences should influence the effect of international trade on market performance. Advertising and product competition influence final consumers, of course, but manufacturers proximately sell their wares to the nation's distributive sector, and the

¹⁵ Esposito and Esposito (1971) divided their sample into consumer- and producer-goods industries. With differentiation much more evident among consumer goods, we would expect import competition to have less impact on profits there. This relation appears in their most fully specified equations (Table 1, equations 2a, 3a) but vanishes when other variables are dropped or a heteroskedasticity correction is made.

¹⁶ Khalilzadeh-Shirazi (1973, Chap. 2) finds that the sensitivity of margins to import competition is greater in producer-goods industries, but the difference is not statistically significant. The same is true of the differential sensitivity of the margins of consumer- and producer-goods industries to export opportunities.

bilateral bargaining power of the retailers varies quite substantially from sector to sector. In particular, consider the distinction between "convenience goods" and "specialty" or "shopping goods" traditionally made by marketing specialists. Manufacturers of convenience goods establish their differentiated varieties through nationwide sales promotion; once this is done, the retailer holds little bargaining power against them. Other consumer-goods manufacturers need the collaboration of the retailer to effect or reinforce the differentiation of their outputs and are dependent on that collaboration rather than on heavy direct efforts to persuade the consumer. It seems likely that exports and imports are more important disciplines on the market outcome in the case of shopping and specialty goods. There the seller is not at the mercy of scale economies in nationwide sales promotion, and differentiated imports stand a better chance of establishing themselves as effective rivals in the market.

Wherever international competition *does* occur in differentiated products, it makes market adjustments differ from what the theory of purely competitive markets leads us to expect. The oft-noted phenomenon of intra-industry specialization involves the exchange of goods which require essentially the same production process and which therefore cannot be explained on conventional lines of comparative costs. Furthermore, empirical studies of the effects of eliminating tariffs within the European Economic Community have shown that the increased international competition may serve mainly to deepen intra-industry specialization rather than to extinguish some industries and greatly expand others (see Balassa, 1966; Grubel, 1967, 1970; Elkan, 1972; and Gray, 1973). Product differentiation is not a necessary condition for this result,¹⁷ but the affinity is considerable. When an industry producing a heterogeneous, differentiated output is imperfectly competitive, the prices of all its subproducts tend to be elevated above marginal cost. The individual firm, seeking to capture economies of multiproduct sales or distribution, adds to the lines it produces, even at inefficiently small scale. It does so because it cannot purchase the additional subproduct wholesale at or near its long-run marginal cost of production. The effect of reduced barriers to trade, or any other intensification of international competition,¹⁸ may then press prices

¹⁷ Witness the occurrence of intra-industry specialization in the undifferentiated iron and steel industry (Adler, 1970).

¹⁸ Intra-industry specialization was first identified as a consequence of reduced trade barriers in the EEC countries (Balassa, 1966; Grubel, 1967), but it has also been found among industrial countries that have undertaken no special trade liberalization (Grubel and Lloyd, 1971; Owen, 1972; Lermer, 1973).

closer to marginal costs and force firms to sort out their inefficiently extended product lines.

International Oligopoly

So far, I have supposed that sellers in national markets are generally few enough to recognize their interdependence, but I have neglected the possibility that interdependence¹⁹ runs across national boundaries. The national market is, in fact, an arbitrary starting point for this analysis, and a reasonable one only if breaks regularly occur at national boundaries in the global chain of mutual dependence. Starting with the national market is probably not hard to defend, even apart from the tariffs, nontariff barriers, and transport costs already mentioned.²⁰ There are two overlapping groups of reasons.

First, producers of a given nationality share a common language and culture that condition interfirm as well as interpersonal relations; mutual understandings are easier to achieve than when market rivals lack these cultural bases for communication. Why should the "we/they" distinction fail to guide the hand of the entrepreneur, when its power over other human relations is carved so deeply upon the records of history? The importance of national boundaries is especially clear if we accept that much interseller coordination is tacit. With foreign rivals, it is less easy to spot the "focal points" (Schelling, 1960). Different managerial motives or decision-making structures may cause trouble. The greater ease of intranational coordination may be abetted by market-structure traits peculiar to the national market, such as ties to financial institutions or cost fixity due to special features of the nation's labor-relations system.

The second set of reasons turns on the role of the national government, which, whatever its attitude toward collusion and monopoly in the domestic market, is always the potential ally of the domestic producer in his adversary relations with foreign competitors. The government may or may not promote collusion among domestic rivals; it certainly strengthens the national firm's ability to repel attacks on its home market, and thus reduces the credibility (because of ease of

¹⁹ I shall use "interdependence" as shorthand for the more awkward but precise "mutual interdependence recognized among oligopolists."

²⁰ It is sometimes suggested that most industries would show quite low concentration ratios if the calculation were made globally, and that hence mutual dependence recognized across national boundaries is hardly an issue. The premise is broadly true, with important exceptions, but the conclusion does not follow. The question is one of *some* international interdependence, not necessarily comprehensive international interdependence.

abrogation) of any collusive arrangement that entails continued access to the foreign partner's national market.

Behind the proposition that intranational coordination is easier than international lies the popular but formally elusive concept of a producer's "home base." It is probably best seen as an expression of concern for gambler's ruin—the entrepreneur's (or manager's) utility from possessing a source of profit sufficiently large and sure to protect the firm against most major calamities (Barker, 1951). A firm could be significantly less risk-averse in market conduct bearing on its fringe activities than on its base; in particular, it would be more eager to sustain collusive understandings in its base market and more forceful in seeking to combat any threat to its base. In the context of our analysis of international market forces, the base is clearly likely to be a national market, although for a firm vending diversified products it could be a particular product market.²¹

The hypothesis of greater interdependence in national markets helps to explain several phenomena. One is dumping. If this is not just a sporadic consequence of capacity in excess of demand at the domestic-market price, it can reflect a persistently lower level of collusion with foreign sellers. Yet the complaints it draws from "injured" producers put a lie to the suggestion that interdependence between sellers of different nationality is totally unrecognized. Unfortunately, there is little systematic evidence on the extent of dumping in markets for manufactured goods.²² My impression is that it is quite common in industries that are oligopolies at the national level, but more extensive and less stable in industries that turn out undifferentiated products. That difference accords with the preceding assertion that international competition should be more effective in markets for undifferentiated goods.

²¹ I have advanced several propositions about oligopolistic interdependence in the open economy that relate to each other in rather complex ways. The "home base" notion suggests that producers might be more collusively defensive about their central than their peripheral activities. It was also suggested (note 11 *supra*) that diversified activities may help a firm to repel entrants into its "base" market. Yet export (or other diversification) opportunities also may reduce the firm's incentive for cautious interdependent conduct in its base market. The last proposition is consistent with the first two if its *ceteris paribus* characteristics are kept in mind: the diversified firm's incentives to "play it safe" in its base market are weaker than those of the specialized firm, even while its effectiveness on the defense is greater.

²² One suggestive study is based on the experience of U.K. manufacturers before and after the 1967 devaluation (Gribbin, 1971). Depending on the profit measure employed, rates of profit on the sampled products were 4.3 to 8.5 per cent higher on home than on export sales in 1966. The devaluation caused the fraction of export prices equal to or exceeding domestic prices to approach one-half, but it probably did not reverse the profitability differential.

Another phenomenon explainable by lower international interdependence is the response to changes in import prices by domestic oligopolies that maintain sticky list prices. Casual evidence suggests that oligopolies often give up market share to imports rather than break up a hard-to-sustain tacit collusion on domestic list prices. Statistical evidence seems to confirm this behavior pattern for the U.S. steel industry.²³ The pattern suggests both the lack of effective collusion among international sellers and the willingness of those domiciled in a national market to pay stiff penalties rather than risk the breakup of tacit understandings.

Trade, Scale Economies, and Technical Efficiency

It can be argued that allocative efficiency is probably a less important dimension of industrial performance than technical efficiency—the degree to which inputs are combined in the most efficient fashion. The weakness of both our theoretical and empirical grip on the determinants of technical efficiency dampens any effort to integrate the influence of international trade. Hence, the following remarks are tentative.

Let us take the most easily researched dimension of technical efficiency, production at an efficient scale. The existence of scale economies in the production of tradable goods complicates the welfare economics of trade policy, because it can prove socially desirable to promote import substitution or modify export pricing in ways that would not result from the actions of a profit-maximizing domestic producer (Corden, 1967; Basevi, 1970; Frenkel, 1971; Pursell and Snape, 1973). I put this problem aside, however, and consider only the relation between trade and the avoidance of inefficiently small producing units.

The effects of import competition and export opportunities should in general parallel their effects on positions of domestic monopoly power. Insofar as trade confronts domestic industries with perfectly elastic excess demand functions, it removes the incentive to build inefficiently small facilities because of the downward slope of the demand curve. The exporting enterprise that can sell profitably at a world price has no incentive to sustain a suboptimal scale of production unless scale economies persist when output reaches the volume of world consumption. Likewise, an import-competing enterprise

²³ See Krause (1962) and Mancke (1968). Rowley (1971, pp. 220-221) deals with U.K. producers' responses to import prices. A similar pattern can be deduced analytically for a domestic monopolist who faces import competition at an uncertain price (see White, 1973).

makes the best of its situation by minimizing costs relative to the world price of competing imports.

As with allocative efficiency, these deductions from simple assumptions (homogeneous product, no transport costs or tariffs) falter somewhat as complications are introduced, but the doubts now intrude mainly on the import side. The effect of export opportunities on efficient scale is not subject to serious qualifications. Whether or not the firm can discriminate between domestic and foreign markets, whether or not its product is differentiated, whether or not it enters into some collusion with foreign sellers, the generalization still seems safe that an f.o.b. world price in excess of minimum attainable long-run average cost should supply an incentive for exploiting available economies of scale. This is indeed confirmed in Scherei's (forthcoming, Chap. 3) study of the extent of suboptimal scale, where the share of production exported yields a large and significant influence on plant size (see also Weiser and Jay, 1972; Khalilzadeh-Shirazi, 1973, Chap. 2; Pryor, 1972).

The effect of import competition might be less salutary, notably when product differentiation is present. Allow an industry producing a differentiated good to reach equilibrium in a closed economy. For reasons established long ago by E. H. Chamberlin, at least some firms will survive with profit-maximizing outputs that incur diseconomies of small scale. Now open the market to trade, with foreign producers enjoying a unit-cost advantage and offering domestic consumers a substantial increase in the number of varieties among which to choose. The demand curve facing the average domestic producer shifts to the left; it may or may not also become flatter, depending on the substitutability between domestic and foreign varieties of the product. The extent to which domestic plant scale is suboptimal could remain unchanged or even increase.²⁴

On the other hand, the restriction of trade by tariffs could also preserve and encourage inefficiently small-scale production. Tariffs surrounding a small market for manufactured goods are often said to provide a handy focal point for pricing by domestic sellers—the world price plus the tariff. If the product is differentiated, firms may crowd into the industry until excess profits are squeezed out by the accretion of small high-cost operations.²⁵ A differentiated industry might evade

²⁴ The chief uncertainty about this prediction arises because product differentiation also increases barriers to the entry of new firms, and thereby the chances that extant sellers could be large enough to achieve minimum-cost scales of operation (see Eastman and Stykolt, 1960; 1967, Chap. 1).

²⁵ This model has been advanced for a range of Canadian manufacturing industries by English (1964, Chaps. 4-5).

this outcome through the intra-industry specialization described above —relative costs, transportation charges, and foreign tariffs permitting. Scherer's study of twelve industries in six countries suggests that the extent of suboptimal capacity actually increases with the import share of the market, although the relation is not statistically significant. Furthermore, Scherer could not identify a clear-cut influence on plant size from the elimination of internal tariffs in the European Economic Community, although the problem was mainly one of disentangling this influence from the many others at work.²⁶

Evidence from Industry Studies

The aim of this section has been to survey a few of the chief interactions of trade with other elements of domestic market structure, not to cover every possibility. I have mentioned the relevant empirical evidence from statistical cross-industry studies, a staple research method of industrial organization. Another source of empirical insight is the detailed study of an individual industry over time. One's first impression from the shelf of industry studies, most of which concern U.S. markets, is of the paucity of attention they give to the influence of trade.²⁷ Nonetheless, a few insights emerge to support or extend the hypotheses set forth above.

As expected, studies of industries producing homogeneous industrial materials report that disturbances in supply-demand balance are quickly transmitted around the world, and highly concentrated sellers in individual national markets sometimes have little scope for independent action. Thus, in the mid-1950s, entry into or expansion of sulphur production in several countries lowered world prices and squeezed out the excess profits of U.S. domestic producers (Hazleton, 1970, pp. 148-150). However, these studies also reveal the processes by which national markets are insulated from foreign competition. Exporters in international oligopolies, such as aluminum, show respect for the domestic seller's potential ally in the customs office and, at the least, avoid aggressive pricing behavior when selling to their rivals'

²⁶ Scherer's (forthcoming, Chaps. 3, 4) interview evidence documents the influence of foreign tariffs and international collusion on "spheres of influence," constricting the ability of export producers to improve their scales of operation. The simple correlation between domestic tariffs and the extent of suboptimal capacity is positive and significant in this study, but the significance of tariffs dries up in the multiple-regression analysis.

²⁷ Is that the reality, or only our perception of it? The same unconsciousness of external influences marks the more open U.K. economy, according to the limited industry studies available (see Rowley, 1966, pp. 206-207).

national markets.²⁸ National oligopolies show the "we/they syndrome" in purposive and collusive behavior to maintain domestic patterns of conduct and to fight off invading imports collectively. In the 1930s U.S. cement manufacturers organized a collective boycott against competing imports, and forward vertical integration has been used elsewhere for this same purpose (Loescher, 1959, pp. 136-137; Hazleton, 1970, pp. 80-81). Product innovation has been used to repel import competition (Bright, 1949, p. 263; Kaysen, 1956, pp. 199-200). In his study of the automobile industry, however, White (1971, Chap. 11) argues that moves to meet foreign-product competition were postponed until they could be taken simultaneously by the domestic Big Three, preserving parallel product strategies without running afoul of small-scale diseconomies. Kudrle (1974) finds some evidence that dominant domestic oligopolists in the international farm-tractor industry may act to preserve their fringe domestic competitors as a shield against full-blown invasion of the market by large foreign firms.

The industry studies also tell something of cross-national interdependence among firms and the extent and character of imperfect competition that can arise from that source. Some manufacturing industries are clearly concentrated enough at the world level to hold prices above marginal costs without formal cartel arrangements. In this fashion, for example, the farm-machinery industry maintains substantial price discrimination against North American markets (Schwartzman, 1970, Chap. 6).²⁹

Cartels have, as expected, been more common in industries that turn out homogeneous goods and are highly concentrated at the level of the national market. Cartel restrictions on competition are generally of a blunt-edged sort, dividing national markets among members or sharing out the subproducts of an industry. Patents and patent pools have often been important in maintaining their effectiveness. Breakdowns of agreements (sometimes followed by reconciliation) have been common and seem to increase with the number of sellers party to the agreement.³⁰ The experience generally mirrors that of the less formal collusive patterns found in similar industries in the United States, suggesting that the difference between behavior patterns in national and world industries is one of degree.

²⁸ Apparently, the low-cost Canadian aluminum producer forewent a natural role of world price leader for that reason (Peck, 1961, p. 51).

²⁹ Also see Kudrle (1974, Chap. 10) and the discussion of dyestuffs producers in Reddaway (1958, pp. 249-251).

³⁰ For general descriptions, see Stocking and Watkins (1946, 1948); Markham (1958, pp. 80-83, 85-91, 97-106); Bright (1949, p. 311).

III. FOREIGN DIRECT INVESTMENT AND MARKET PERFORMANCE

The other international force affecting the performance of national markets is the multinational corporation. In this section I consider the sorts of markets in which we can expect the multinational firm to appear, and then outline the probable market behavior of these firms in the context of both national and international markets. This analysis leads to predictions of the effects of the multinational firm on market performance.³¹

Causes of Foreign Direct Investment

In recent years, economists' analysis of the causes of foreign direct investment has moved away from macroeconomic explanations (e.g., national gluts or shortages of entrepreneurship) to sector-specific explanations. Rather than losing generality, this shift in focus has allowed us to explain many phenomena—the large interindustry differences in the importance of direct investment and the significant gross exports of equity capital from many industrial countries—that had previously resisted understanding. We can now explain the occurrence of the multinational firm, starting from a coherent model of profit-maximizing behavior and moving to empirical predictions about its incidence, behavior, and welfare significance.³²

Briefly, the analysis starts from the proposition that the entrepreneurial unit has a natural national identity. Economically, this means that it automatically comes by a large stock of knowledge about the language, laws, and customs of its native land—intangible capital that is productive in guiding the firm toward profit-maximizing decisions. A firm that invests in a foreign market is at an intrinsic disadvantage, because it must consciously recruit this information (or run the risk associated with action under relative ignorance). On this view, the dice are loaded to some degree against the multinational firm, and its emergence thus demands an explanation.

The explanation for much foreign investment—certainly that in manufacturing industries³²—lies in the fact that the successful firm

³¹ For a synthesis with references to earlier contributions, see Caves (1971).

³² The following discussion concentrates exclusively on what I call "horizontal" direct investment—the firm produces abroad the same general line of goods as at home. An important volume of foreign investment instead involves backward vertical integration, to provide the parent with components or raw materials at minimum cost or risk. The explanation of this sort of direct investment is rather

also gains intangible capital in the form of patents, trademarks, or general knowledge about how to produce and distribute its products. Being intangible, these assets can in some measure be moved from one national market to another, gaining rents in new locations without impairing the stock left in service at the home base. And the advantage to the firm investing abroad can offset the disadvantage noted above—the cost of gathering intangible capital for the foreign subsidiary.³³

A firm that has acquired such intangible capital chooses among several methods of exploiting it in foreign markets. One is simply to export goods that embody the design, formula, trademark, or reputation that the firm has established. Another is to license producers abroad to employ the firm's technology or replicate its product. The third is to establish a producing subsidiary to exploit these assets directly in the foreign market. The choice among these alternatives will depend on many factors. An explanation of foreign direct investment thus must answer not only the question "Why invest abroad at all?" but also "Why investment, rather than exports or licensing?" The answers to the second question will depend on characteristics specific to the firm and its industry—the realm of industrial organization—and on the nation's factor endowment—the realm of international trade.

Take first the market-specific characteristics. Intangible capital is heterogeneous: knowledge about production processes, knowledge about adapting the firm's basic product to local demand conditions, etc. Certain components of intangible capital are much more suited than others to employment via direct investment—notably, knowledge about how to serve a market. When the product must be adapted to local tastes and conditions and when the existence of nearby production facilities is complementary to servicing the product after sale, or even just to forging a reputation for quality, direct investment tends to be the preferred alternative. In terms of the standard concepts of

different from that for horizontal investment. In the case of large natural-resource investments in the industrial countries, it turns on the role of capital costs and the avoidance of uncertainty that would otherwise surround bilateral oligopoly bargaining among firms with high fixed costs and long-lived investments. Vertical integration, including that via direct investment, can have its dysfunctional consequences in such situations, but market failures of one kind or another are hard to avoid. See Caves (1971, pp. 10-11, 27) and Caves (1974c). The latter paper develops the industrial-organization framework of direct investment in more detail than the present essay.

³³ The analysis of the role of intangible capital leans heavily on Harry G. Johnson, "The Efficiency and Welfare Implications of the International Corporation," in Kindleberger, ed. (1970, Chap. 2).

market structure, a strong affinity exists between direct investment and *product differentiation*.³⁴

Conversely, if the knowledge takes the form of specific production techniques that can be written down and transmitted objectively, licensing may be a prime vehicle. Exporting stands as a contender when the intangible advantage can be embodied in the firm's product only at its primary locus of production, or at least when no special need arises for local adaptation.

Another leading market-specific determinant that favors direct investment is size of the parent firm. Direct investment clearly entails a larger and riskier fixed cost than the alternatives, exporting or licensing, because of the substantial and relatively fixed information and search costs that must precede any actual investment abroad. Licensing entails much lower costs of search and real investment, but it is also a more rough-edged method of extracting quasi-rents. Given the presence of lender's risk or outright imperfections of capital markets, direct investment becomes the province of the large firm with substantial internally generated funds to finance the initial fixed charges. On a probabilistic basis, this requirement of large size for the investing firm implies that foreign investment will occur principally in industries where sellers are few in number.³⁵ Putting all this together, we expect to find direct investment in manufacturing industries marked by differentiation and fewness of sellers, or *differentiated oligopoly*.

The other characteristics determining direct investment lie in the realm of international trade. One characteristic is evidently the position of the parent's industry in the nation's scale of comparative advan-

³⁴ In connection with Porter's (1973) research, I noted evidence of an important subdivision of differentiated consumer goods according to the relative monopsony power of the distributive channels and scale economies in nationwide sales promotion. It was suggested that trade is apt to be the more effective international market constraint in the case of specialty and shopping goods. Conversely, the multinational firm should be relatively more important where convenience goods are involved. The economies of scale in nationwide sales promotion require a large-scale market entry if the multinational firm is to make any effective use of its intangible assets, and the uncertainties of international trade probably impel the seller toward local production facilities if high-density distribution activities are to be carried out successfully. Statistical research (Caves, 1974b) does not directly confirm this prediction, but it does show that foreign investment in the two sectors responds to various determinants in ways consistent with Porter's model.

³⁵ The importance of size of firm as a predictor of direct investment is shown by Horst (1972b). Other connections may exist between concentration and foreign investment. A firm with market power must diversify if it wishes to grow faster than its "base" market; otherwise, its growth entails a struggle for market share. The diversification might take the form of expansion into a foreign market, rather than into other domestic markets.

tage. A favorable position encourages exporting, against the alternatives of direct investment and licensing. Because two-way trade can clearly occur in direct investment as well as in a differentiated industry's flow of merchandise, we can say that an industry that is a net importer on trade account is apt (*ceteris paribus*) to be a net exporter on the balance of international indebtedness. An important corollary is that direct investment, unlike other forms of international capital flow, should be sensitive to the exchange rate (as the link between nations' production-cost levels, and apart from any expectations concerning future exchange rates); a country that devalues can hope for improvement in its balance of payments on direct investment as well as on goods and services.

Another trade-related variable that should influence direct investment is tariffs and transport costs. A finding from many of the surveys of foreign subsidiaries is that the initial investment was often made after the parent firm had established an export trade that was threatened by a higher tariff, with a substantial goodwill asset already created in the market, the parent chose to establish local production facilities rather than abandon its goodwill entirely. Transport costs should affect the choice in similar ways. A firm that makes a product that is costly to ship per unit value and that requires only ubiquitous raw materials will be disposed toward establishing multiple plants close to its customers. In this and other respects, the multinational firm may be viewed simply as a multiplant enterprise that happens to sprawl across national boundaries.³⁶

One conclusion evident from this analysis of the interindustry distribution of direct investment is that it goes where trade does not. Not only are exporting and direct investment alternative strategies for the individual firm, but direct investment tends also to occur in differentiated products where international trade may be a relatively ineffective constraint on poor market performance. We return to this proposition after examining the probable effects of the multinational firm on market behavior and performance.

Multinational Firms and Market Behavior

Is the multinational firm a constraint on market distortions, in the same sense that a perfectly elastic world supply of cabbage at 10 cents a pound constrains what the domestic cabbage monopoly can charge?

³⁶This and the preceding predictions, save for the influence of tariffs, find strong statistical support in Caves (1974b). On the influence of tariffs, see Horst (1972a). The multiplant hypothesis is developed in Eastman and Stykolt (1967, Chap. 4) and McManus (1972).

It may be, for two reasons. First, multinational firms tend to develop in just those industries where barriers to the entry of new firms tend to be high. The formation of a new subsidiary, at least on a "green field" basis without takeover of a going enterprise or establishment, amounts to entry by an established firm in another (geographical) industry; counting as a specially well-endowed potential entrant, the multinational renders the supply of potential entrants larger and in effect makes the barriers to entry lower than they otherwise would be.³⁷

Second, multinational firms actually operating in a given national industry may behave differently from domestic firms holding equivalent shares of the market. These possible differences in conduct are vital to the multinational's effects on market performance, and I shall thus consider them in some detail. A national branch of a multinational firm might behave differently from an equal-sized independent company for three reasons:

1. *Motivation.* I accept the conventional view that, as a first approximation, the maximization of profit can safely be assumed to be the prevailing motivation of the firm, multinational or not. Indeed, the available evidence supports the view that the multinational maximizes profits from its activities as a whole, rather than, say, telling each subsidiary to maximize independently and ignoring the profit interdependences among them (Stevens, 1969). But overall maximization by the multinational can lead its subsidiary to behave differently from an independent firm. The rate of earnings retention is a possible example. A subsidiary might pass up an otherwise profitable local use of funds if the expected yield would be higher elsewhere in the global corporation, whereas a local firm would make the local commitment. Another difference arises because the multinational firm almost automatically spreads its risks, and could therefore behave quite differently in an uncertain situation from an independent having the same risk/return preference function (Shearer, 1964; Dunning and Steuer, 1969; Schwartzman, 1970, p. 205). It is hard to generalize, though, about the consequences of such differences in opportunity costs and allocative choices.

2. *Cognition and information.* Its corporate family relations give the multinational unit access to more information about markets located in other countries—or (what is equivalent in effect) information to which it can attach a higher degree of certainty. This information need not be unavailable or even more costly to the national firm. The point is that at any given time the multinational has this stock in hand; its

³⁷ The reasons why the multinational firm has a potential advantage against each of the conventional barriers to entry are set forth in Caves (1974c).

national rival may or may not. The national firm therefore is probably more dependent on its home base in the national market, and this difference could color the multinational's view of actions that might increase its market share (and its own profits) at the expense of its rivals' shares (and total profits). With better information about extranational alternative uses of its resources and less dependence on the local scene for organizational survival, it has less to lose from rivalrous market actions. It could be more disposed than a national enterprise toward strategies yielding a larger profit but with a larger variance. The multinational unit could also collaborate less closely with its local rivals, especially in its early years, for the simple reason that its ear is less attuned to the "focal points" of tacit collusion among its unfamiliar new neighbors. The young subsidiary, even if formed by the acquisition of a going national firm, stands outside the network of tacit understandings and rules of the game developed by the previous market occupants, and is more apt to rock the boat. As the subsidiary ages and loses its parvenu status, however, it tends to play by the rules of the local game; also, it may tread softly at any time because of its political vulnerability.³⁸

3. *Opportunity set.* Each player in a complex oligopoly game is apt to hold a somewhat different set of assets and to seek to slant the game along lines that will make his own asset bundle most productive of profits. The asset bundle of the multinational unit can differ from its national rival's in various ways. Its skill in differentiating its product, arguably a precondition for direct investment, inclines it to prefer nonprice forms of rivalry. Holding other traits of market structure constant, the presence of subsidiaries thus disposes an industry toward venting its competitive animal spirits through nonprice rather than price competition. Another asset that the subsidiary holds is the option to call on the financial assets of its corporate siblings—the "long purse" that makes it relatively secure from the predatory conduct of its rivals and a possible predator itself (Telser, 1966).

What do these behavioral differences mean for the performance of markets populated by multinational firms? The conclusions evidently will be ambiguous. Let us see where they fall. Because of the multinational's advantages over new firms, it provides a clear increase in the supply of potential entrants to the industries in which it operates and should thus constrain the departure of industry profits from normality—lowering the "limit price," to use the concepts of industrial organiza-

³⁸ The range of behavior patterns suggested in this paragraph seems to match those reported in surveys of subsidiaries' behavior (see Brash, 1966, pp. 182-192; Stonehill, 1965, pp. 98-99).

tion.³⁹ Furthermore, the cognitive and information resources of the multinational may dispose it to exhibit less collusive and restrictive conduct in the national market than would a similar domestic firm. There is thus some chance that multinational firms reduce allocative distortions in a certain range of industries. This effect is subject to some offsets, however. The multinational's predisposition toward product rivalry and advertising may cause it to devote excessive resources to these activities. Differentiated varieties of a good originating abroad do offer users genuine welfare-increasing expansions of the choices available to them. But the commitment of resources to sales promotion may count at least in part as a minus, especially when we consider that such nonprice competition feeds back to augment barriers to the entry of new firms and thus raises the long-run potential for market distortions.⁴⁰

The presence of multinational firms may also change an industry's probable quality of performance in two other dimensions—technical efficiency and progressiveness. The multinational probably tends to be a technically efficient firm itself—if only on the assumption that the market tends to deny inefficient firms the chance to go multinational. Furthermore, it enjoys an option for avoiding diseconomies of small scale that may not be open to its domestic rivals: producing components subject to extensive economies of scale at a single world location. However, operating in industries subject to product differentiation, the profit-maximizing multinational need not always build efficient-scale facilities. Where a nation's market for manufactures is relatively small and heavily protected by tariffs (e.g., Canada), multinationals may crowd in with inefficiently small facilities; each firm profits from a small group of loyal customers and none is induced to lower its price-cost margin and expand its scale of operations (English, 1964).

Any favorable rating of the multinational on technical progressiveness probably turns on its role as a conduit for transferring new productive knowledge from one country to another. Does it raise the speed (or lower the cost) of technology transfers, considering the al-

³⁹ A weak negative relation has been found, among Canadian manufacturing industries, between the profit rate of domestic firms and the share of sales accounted for by foreign subsidiaries. The effect is partly explained, though, by variations in the relative size of the domestic firms; i.e., where their profits are relatively low, it is also because their size is relatively small (see Caves, 1974a).

⁴⁰ Another adverse structural feedback could result from the multinational's "long purse." The size of American multinationals serves as reason—or excuse—for horizontal mergers, often government-encouraged, among relatively large European firms. Whether or not the multinational is by nature a predatory species, the fact of this reaction is itself important.

ternative channels through which they can take place? Both the analytical issues and the empirical evidence are complex. My tentative impression from both survey and statistical evidence is that the multinational firm, in some countries and industries, probably does speed the transfer of technology (see Brash, 1966, Chap. 8).⁴¹

Multinational Firms and International Industries

In considering the effects of international trade on competition, I argued that its salutary influence is limited by any oligopolistic interdependence that spreads across national boundaries. The national boundary, however, was found to be a fairly effective insulator against international collusion. But the multinational firm may promote international collusion. It extends the tendrils of ownership from one national market to another. Clearly, corporate siblings are not likely to compete with each other. Furthermore, the multinational could serve as a vehicle for extending oligopoly behavior across national boundaries.

Consider an international industry populated by a number of national and multinational firms, the multinationals based in diverse parent countries. What patterns of oligopolistic interdependence might arise within and among the various national markets? There are two limiting cases:

1. Multinational status (parent or subsidiary) makes no difference in the patterns of conduct adopted by firms in a national market. In this case, the member units of a multinational firm serve as independent profit centers with full autonomy over national price and product decisions. Any cross-national links in market conduct would be due to factors other than ownership status.

2. Multinational enterprises recognize their interdependence comprehensively wherever concentration is high enough and their perceptions sharp enough to permit it. That is to say, firm A sets its actions in market X taking account of B's expected reactions not only in X but also in any other market Y where they both operate. A expects B to react wherever B's interests are best served by so doing.

Between these extremes of cross-national independence and full cross-national interdependence, a variety of patterns could permit dependence across some boundaries but also maintain cordons along others. National origin might tell; firms domiciled in country X might recognize their interdependence in the X market and in host countries Y, Z, . . . , but firms domiciled in X and Y might not perceive their in-

⁴¹ For statistical evidence of the effects of subsidiaries on productivity in competing home-owned firms in Australia, see Caves (1974a).

terdependence comprehensively. Interdependence might be recognized among units (parents or subsidiaries) producing in the largest single national market (as a "home base") and also with parallel operations in other national markets. Interdependence might run outward from a national market where law and custom smile most kindly on overt collusion.

If we try coupling these patterns of possible interdependence with the possible behavior patterns of multinational units outlined above, the taxonomy quickly overtaxes patience. Let us concentrate on one facet of behavior, the decision to establish a subsidiary in a national market. Whatever the international interdependence among firms, the formation of a new subsidiary is clearly a rivalrous or independent move. Even if the parent was previously exporting to the market, local production facilities make it a more effective rival and a greater threat to other sellers. International collusive arrangements of the "sphere of influence" sort should entail nonaggression pacts between firms to keep subsidiaries out of each other's territory. On the other hand, an obvious form of retaliation when *A* founds a subsidiary in *B*'s home base is for *B* to invest in *A*'s. Firms domiciled in the same national market might well tend to follow the leader in starting subsidiaries. Assume that *A* and *B* both are domiciled in *X* and have been exporting to *Y*. When *A* starts a subsidiary in *Y*, not only are *B*'s exports to that market threatened, but also it is possible that *A*'s experience with the subsidiary will yield feedback that makes *A* a more formidable competitor back in *X*.⁴²

Indeed, the empirical evidence does document a good deal of this parallel and reactive behavior in founding subsidiaries. The entry of foreign firms into the U.S. market has sometimes followed on the establishment of U.S. subsidiaries abroad—and the foreign parents' discovery that they could compete with the U.S. giants (Daniels, 1971, p. 47). American industries have shown a strong tendency to parallel behavior in starting subsidiaries in foreign countries. Knickerbocker (1973), studying the dates when subsidiaries were established by U.S. manufacturing companies during the years 1948-1967, found that they were bunched in individual countries more than one would expect on a chance basis (note that scale economies should cut against the simultaneous start-up of new facilities). Furthermore, the tendency to tight parallel action was stronger for firms not highly diversified in the U.S. market and thus exposed to greater risks if rivals should successfully steal a march via foreign investment.

⁴² Evidence suggests that this feedback in fact occurs in a majority of cases (see Reddaway *et al.*, 1968, pp. 322-324).

The industry studies are even more reticent on the role of foreign investment than they are on the role of international trade. There is some indication that, while multinational firms have been effective in promoting product rivalry and innovation, they have also bestirred defensive mergers among national firms.⁴³ Whether these mergers weigh more heavily as a step toward increased technical efficiency or as a sinister move toward a higher level of oligopolistic collusion is, alas, unknown.

IV. SUMMARY: INTERNATIONAL FORCES AND MARKET PERFORMANCE

I have suggested that competitive forces in the international economy complement one another in limiting the distortions that can occur in national markets. Whatever an industry's structural traits, we can pick out some international force as the most likely potential constraint on departures from a reasonable competitive outcome. (One of Panglossier disposition than mine might say that some international force will always ensure competitive performance.) This knowledge of the most probable source of market discipline is valuable for purposes of both research and policy.

Consider how the pieces fit together. Under certain assumptions, the effects of foreign trade via import competition and export opportunities are symmetrical in limiting departures from competitive outcomes. If they are, an industry will tend to face one constraint or another—depending on its comparative-advantage position. This proposition is sharply limited, however, because the disciplining force of export opportunities can easily evaporate when tariffs are present and dumping possible.

The disciplining force of trade flows is probably less when product differentiation is present, but in just those circumstances the multinational firm becomes a more prominent actor. Furthermore, because the firm itself makes a choice between direct investment and export, we conclude that the industry with a comparative disadvantage will face less threat from the entry of multinational firms but more from imports, and vice versa for the industry with a comparative advantage. Both natural and artificial trade impediments blunt the disciplining force of trade, but they may encourage that of foreign investment. Industries producing nontraded goods and services, sheltered from direct

⁴³ Information on the automobile industry is at least suggestive (see Silberston, 1958, p. 33; Ensor, 1971; Sundelson, "U.S. Automotive Investments Abroad," in Kindleberger, ed., 1970, Chap. 10).

foreign competition, thus are also potential prey to foreign subsidiaries.

An important qualification to this universal harmony is that the multinational firm is a mixed blessing as a market force. It is well equipped for scaling barriers to entry and may be less disposed toward oligopoly consensus in a national market than a domestic firm; also, it may speed the transfer of technology and attain (and encourage in its rivals) higher levels of technical efficiency. But it can slant market behavior to an undesirable degree toward advertising and product competition, and it may promote increased concentration and collusion running across national boundaries.

Let me close with some suggestions for economic research and policy. Empirical research on international market forces has at last become active in the field of industrial organization, as the statistical inputs have become available—and not just for the United States. We have some relatively strong conclusions about the role of trade. But even with the copious survey evidence on the multinational firm, it has not been examined very closely as a market force. This is despite the experiments that Nature and statesmen have obligingly performed in recent years—greatly increasing the multilateral penetration of foreign investment, removing tariff barriers within the European Economic Community, etc. The opportunities for research seem great, and the appropriate direction clear. In the international-trade camp, the research performance has been far less satisfactory. Lulled by the mathematical convenience of purely competitive conditions, theoretical research has paid little attention to the causes or consequences of imperfect competition, save for the obligatory bow to optimal tariffs and taxes on capital. And empirical research—lavished on a few safe topics such as the Leontief Paradox and financial capital flows—has elsewhere either been nonexistent or followed its nose with but slender guidance from economic theory. One hopes for both a redirection of research and a more fruitful interchange between theory and empirical investigation.

It is clear that many issues of antitrust and commercial policy turn closely on the results of testing the hypotheses discussed above. Paradoxically, the relation between these branches of policy, once a staple of American political economy ("the tariff is the mother of trusts"), has nearly disappeared from sight. One finds, instead, such spectacles as the U.S. government, bent on restricting certain imports at minimum annoyance to foreign nations, encouraging the cartelization of foreign exporters to reduce competition in U.S. markets! If we can avert our gaze from such squalor, more subtle issues remain to be dealt with. International market links—trade and the multinational firm—logically

preclude our dealing with issues of competition on the basis of one-national-market-at-a-time. Policies toward competition, trade, and foreign investment in one country spill over and affect market performance in its trading partners. Issues of policy assignment and interdependence, familiar in international macroeconomics, are clearly present at a microeconomic level as well. One hopes that the further development of theory and empirical research in this area will lead to their due recognition.

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