

NORMATIVE OBSERVATIONS ON THE INTERNATIONAL VALUE-ADDED CHAIN AND STRATEGIC GROUPS

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Second, global strategies rest on the exploitation of economies captured along and between value-added chains, economies that could not be achieved without sourcing or marketing internationally.

Third, a key element in exploiting these economies is to create marketing programs that adapt products to national environments and yet permit the exploitation of strategic assets upstream in the value-added chain.

Though drawing upon economic concepts, this article differs from other recent economic interpretations of corporate strategies. Its departure is from a view of the firm that exploits certain economies along multiple value-added chains. These economies, which are labeled "economies of scope," drive a firm's strategic posture relative to its competition.²

The next section develops these concepts for a firm that designs its strategy in terms of domestic competition. The strategic choices it confronts are the selection of which links in the value-added chain to exploit and how to defend its strategy competitively. The second section considers strategy formulation for

dent. (In other words, firms face different investment opportunities.) Rather, firms must analyze their competitive strategies in terms of opponents who bring different resources to the industries and who follow different betting strategies.

The betting analogy differs not only from the benchmark model of perfect competition, but also from static models of imperfect competition. If firms were homogeneous in technologies and strengths and if competition was brisk, there is only a single optimal and, more importantly, viable strategy. But competition is not always brisk in the sense that the environment rewards a single strategy. Rather, firms bet upon particular strengths, or, to use the terminology of corporate strategy, "distinctive competences."⁴ Given heterogeneity of consumer demands, as well as stochastic fluctuations in these demands, multiple strategies may be viable, though not equally profitable. Moreover, as developed later, because of interdependence, what otherwise would be a nonviable strategy in a particular product market can be profitable for a particular firm given its resources. Due to the interplay between productive and organization resources and market niche definitions, firms are faced with heterogeneous sets of investment opportunities. For this reason, this paper dissents from static models of imperfect competition that view industries as defined by the final product and as consisting of entry barriers consistent across firms.⁵

If the notion of distinctive competences and gambling were carried further, although not in the pure sense of independent rolls of the dice or turns of the roulette wheel, firms could be analyzed as making bets on different links in the value-added chain as well as on different market segments. These firms follow integrated strategies. "Integrated" means that the allocation of resources to the various links is made in reference to a common strategy. Thus, the strategy to attack a certain market segment leads to strategies in product development, production, and ultimately marketing and distribution. (Of course, firms may initially choose a market segment based on their understanding of what is their distinctive competence.) The concept of strategic "positioning" is used to capture how a firm aligns itself on an array of product market and factor allocation decisions relative to the alignment of its competition.

Notice that the value-added chain is defined in terms of contribution to market value. There are, of course, multiple ways to define it. Because of the facility of measurement, one appealing way to define each link is in terms of cost. A second way is in terms of the market value of each link. Neither of these ways captures, however, the strategic importance of the link. A third method might be net operating contribution. Like the above methods, this is a static measure.

Theoretically, what one desires is some measure of economic rents, or excess return on investment in each particular link. One possibility is to measure return on investment for the business, and then to impute economic rents—which can only be observed for the final product sale—to the links that a firm maintains in-house over time. Which resource is viewed as strategic depends on a number of variables, such as, economies of scale, experience effects, and the competitive nature of the market place. But it is clear that firms will control the strategic links vital to their long-run success. Thus, Coca-Cola contracts out the bottling process for perpetuity, but maintains strict control over the manufacture of the syrup and the final marketing and advertising.

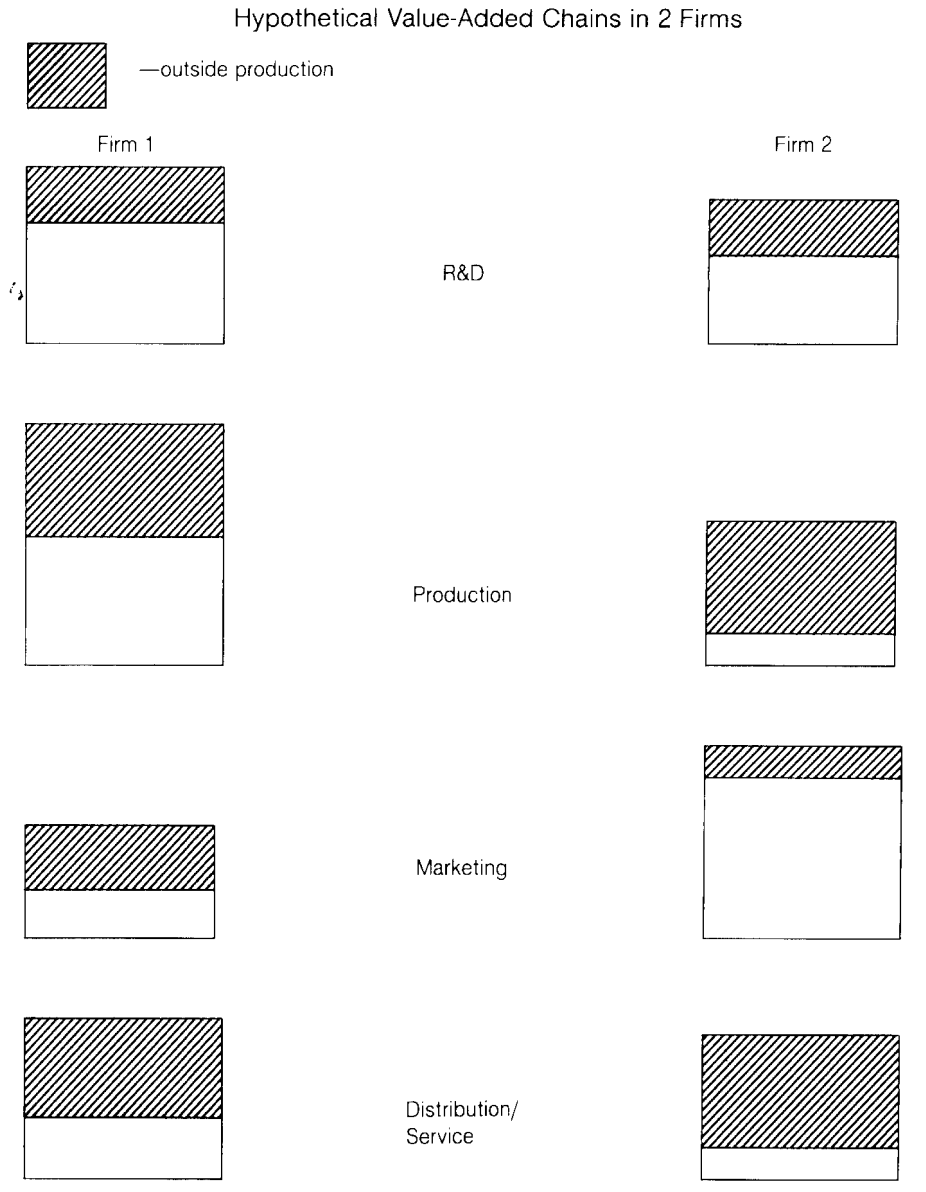
It is, of course, simplistic to describe strategies in terms of single product lines along a value-added chain. For multi-product firms to compete successfully against single product firms, the various product lines must be related through some common strategic resource. This resource can be the technical know-how to specify the production requirements, and the marketing strength to reach the business client on information dissemination, product guarantee, and after-service. Shared resources can also occur in component production, such as the case with the development of the world car in which components manufactured at minimum economies of scale are used as inputs into different models. This

sharing of resources, or what can be called economies of scope, can also occur in management, or simply the ability to manage many product lines more cheaply than the sum of the costs incurred in the management of each product line as a separate business.⁶

Consider, for example, 2 firms whose strategies correspond roughly to those of Apple and IBM in their initial entries into the personal computer market. The first firm builds its success on the design and production of a unique hardware and operating system interface. It allocates considerable resources to the in-house manufacture of disk drives and, critically, the disk operating system software. The initial market target is a segment of business and engineer users whose demand is characterized by sophisticated applications of easily-assembled machines.

The second firm follows a distinctly different entry strategy, partly because it arrives later on the scene, partly because its existing resources dictate such an

FIGURE 1



entry. Rather than building considerable in-house production capabilities, the second firm draws upon its expertise in designing the specifications, but contracts out for the manufacture of the hardware and for the operating system software. Initially targeting the broad business segment, the second firm relies upon its traditional distribution network for its mainframe computers and also contracts out to such chains as Sears and Computerland. The second firm is, thus, betting on its ability to match product design to the needs of the business market segment and, perhaps most significantly, market these products through its brand name recognition and recognized after-service capabilities.

The above argument is illustrated in Figure 1 which depicts a hypothetical value-added chain for the 2 firms. (For simplicity, economies of scope are ignored, but clearly their existence in R&D and in marketing is critical to IBM's success.) The size of each stage reflects its contribution to the total market value of the product, and is independent of whether internal accounting charges each link by cost or by some other arbitrary transfer price. The shaded portion reflects the degree of outside provision of the link. Firm 1 is betting that production of hardware and the critical software will generate the greatest relative contribution to market value. Firm 2, on the other hand, bettin that production in the form of education

contract enforceability. The choice of entry mode into a country reflects similarly the extent to which control must be maintained in order to appropriate the economic rents stemming, for example, from technology, or to stabilize supplies.⁹ Certainly, some of the costs that attenuate the value of the strategic assets differ in an international context due to cultural, political, or geographic factors, but this is a question of degree rather than of kind. The next section concentrates on how international activities augment the positions of firms in the national markets they confront, thus creating industries which are global in character and competition.

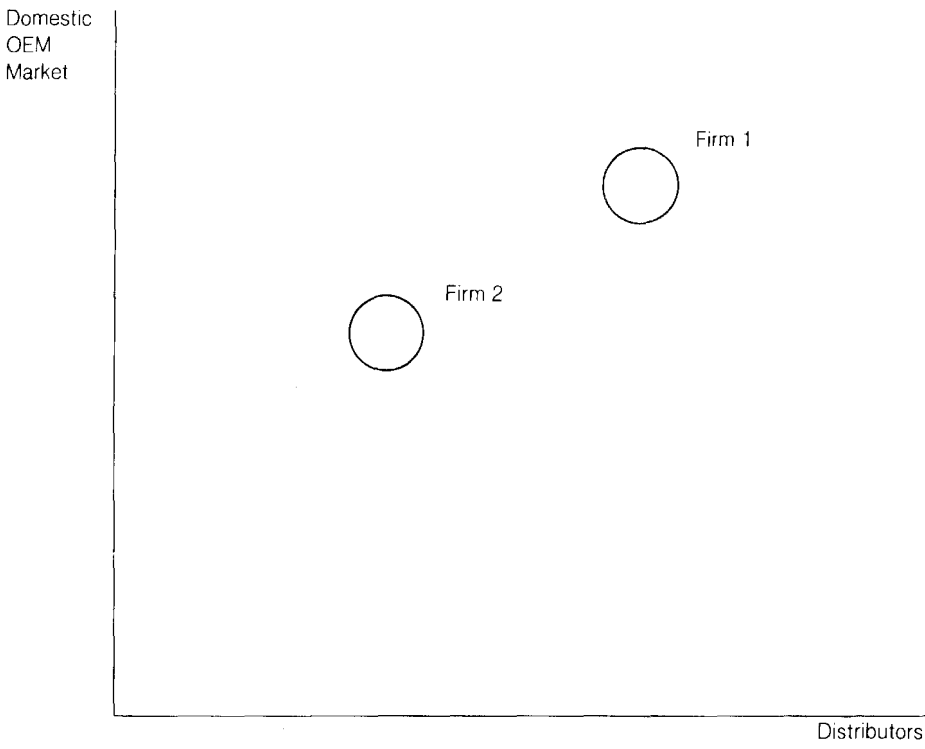
GLOBAL Firms go overseas for one of 3 reasons: to extract raw materials, to source

high growth, competitive entry, and high profitability. Stage 3 is characterized by market maturity and saturation, the existence of a few firms with high market share, and standardized production processes. As entry barriers decline and profits fall, the industry enters stage 4 where production costs are further lowered by sourcing overseas and new markets are exploited. Vernon's product life cycle model is, thus, an explanation of foreign direct investment as defensive moves in response to loss of domestic profitability.

Though the empirical evidence for the theory is not well-established, Vernon's product life cycle has a powerful appeal insofar as it captures much of the strategic behavior that is lost in models derived from economic comparative statics.¹³ Knickerbocker's study [1973], for example, examines follow-the-leader patterns in foreign direct investment and finds persuasive evidence that competitors tended to match investments subsequent to the initial investment of the leader. Based upon Vernon's and Knickerbocker's gaming models, Davidson [1983] builds a normative framework for international strategy, advocating particular decisions based upon the production and market stances of competitors. Positive theory becomes, thus, a normative guide.

To illustrate some of the indications of this approach, consider, hypothetically, the strategic analysis for an American tire manufacturer entering Argentina subsequent to the entry of a competitor. The competitor sought a competitive advantage by supplying the domestic market behind tariff barriers, as well as by avoiding transportation costs. Based upon an analysis of the competitor's strength, it is decided that 2 critical factors will be distribution channels and the share of the OEM market that will generate scale economies. The positioning of the 2 firms is mapped in Figure 2. In this situation, international factors do not alter the domestic situation, for strategic advantages in the Argentina market are not augmented by the international position of the firms.

FIGURE 2
Tire Industry in Argentina



Theories of foreign direct investment assume usually that to operate internationally the foreign firm must offset coordination costs against some strategic advantage. The international product life cycle emphasizes an advantage that stems from product innovation. In the example cited, the success of foreign entry into the Argentina market rests upon product or process know-how superior to local competition. Outside of the initial transfer of technology, the tire subsidiaries operate as domestic firms, and their markets are local.

As powerful as the international product life cycle model is for capturing significant aspects of the history of American foreign direct investment, it is impaired in 4 fundamental ways. First, though it builds upon cognitive limitations of domestic firms to scan international markets, it neglects the important profit-signaling impact that an initial entry has upon competitors. Thus, the initial investment into Argentina might serve as a bright flag of suspected profitability. Competition enters not because of gaming considerations, but because of the pursuit of profit under conditions of imperfect information. As a related point, the model fails to predict when and where investments are made overseas. Third, the international product life cycle appears to suit best the American pattern of foreign investment. Its power is not well documented for explaining the history of early European investments.

The fourth weakness is that the model explains only the initial investments abroad. Given the growth of multinational corporations, the model's assumptions are less empirically persuasive, as Vernon [1979] recently points out, regarding the cognitive limits—or what Perlmutter [1969] calls "ethnocentrism"—of domestically-oriented managers, and regarding differences in relative factor costs. For the purposes of a normative framework of strategy formulation for a global corporation seeking a geocentric profile, the international product life cycle fails to capture the critical linkages between market entry strategies and global positioning. Nor have textbook treatments of global strategy extended significantly past Vernon's gaming model, or strategic portfolio concepts used in domestic settings.¹⁴ In brief, what is required is a consideration of the sequential or incremental decisions given the creation of a multinational network of subsidiaries and market positions. Some elements of this framework are outlined in the next section.

Sequential Investments and

What is different when one moves from a purely domestic setting to an international setting in terms of sourcing and market decision?¹⁵ Consider the following

economies of scale in production in the assembly operations located in Sweden, though the targeted segments in the 2 countries differ markedly in their relative income characteristics.

Economies of scale in the latter stages have different implications. For example, the current strength of oil companies rests in the economies achieved in logistics and distribution. Despite the loss of ownership of most foreign petroleum fields and, in some cases refineries, oil companies have maintained considerable profitability by their control over the latter stages of the value-added chain. Bottling in the beverage industry is often a relatively low capital-intensive process, leading to dispersed and decentralized plants. On the other hand, marketing and brand labels entail considerable initial investments. It is not surprising that beverage companies should be more centralized in their marketing activities than in bottling.

Learning Learning consists of at least 2 elements. The first is learning by doing, whereby human capital is enriched by previous experience on the job. A second kind of learning is technological, namely, the experience which becomes embedded in organizational patterns of behavior and is specific to the firm rather than to the individual. Both kinds of learning generate economies that are identified with the "experience curve," which depicts the rate of decline in costs with prior cumulative production.¹⁷ An issue of tremendous importance, particularly in terms of human resource management, is the international transfer of learning within and between firms.

In the context of international business, individual and organizational learning differ concretely in terms of their transferability. The classic case of individual learning is the aircraft industry where a steep decline in labor costs is realized as cumulative production expands. The critical question is in which link and in which factor of production is experience captured. By inference from the absence of multinationality of the major aircraft manufacturers, experience appears to be captured by skilled workers in production. The upshot of these locally realized experience economies is that the production activities of aircraft manufacturers is domestic and centralized in a single location. On the other hand, Boeing and Airbus engage extensively in multinational contracting, partly in response to political pressures, partly in response to the absence of transferability between the specialized labor skills engaged in the production of each component. Transferable skills are embodied in engineers who design the components and coordinate their manufacture. With the exception of engines, the critical skills appear, then, to be the engineering know-how and the vast economies achieved in aircraft assembly.

Japanese trading companies illustrate experience effects due to organizational learning. A trading company does not own any specialized physical assets, tends to trade in commodities and in quasi-commodities, and frequently works on commission. Their phenomenal success is not only restricted to Japan, since European trading companies, such as, the Swedish Johnson Group, have also played significant historical roles in international trade. The strategic assets of trading companies rest in 2 areas. The first is economies of scale in logistic systems, particularly in ocean transport in large and sophisticated vessels. The second is the creation of an organizational system that has developed an effective scanning and resource network, and that efficiently disseminates knowledge regarding international profit opportunities through this network. Because the strategic assets of trading companies rest in bulk logistics and market knowledge, it is not surprising that their share of total Japanese trade is falling as Japanese exports and imports increase in their differentiation and sophistication.¹⁸

Economies of Scope Though often confused with economies of scale and experience, "economies of scope" is the pivotal concept underlying the growth of the multidivisional firm and

the transferability of its strategic strengths to international markets.¹⁹ Penrose [1959] argues that the growth of the firm stems from slack in particular organizational resources, especially management, which encourages new product launches. It is of critical importance to recognize that economies of scope must be defined in terms of product lines, not in terms of particular production links. For example, to continue Penrose's argument, the management function may display decreasing average costs but the full economies of scale in this function may not be realized in a single product line. "Economies of scope" refers, in this example, to the exploitation of economies of scale in particular productive functions by increasing the number of product lines.²⁰

Frequently, economies of scope are not differentiated from experience effects. Davidson [1980] argues, for example, that experience effects can be inferred by data which show that firms are likely to launch a product in a country where they have existing operations rather than in a country where they have no prior operations. An alternative explanation, as argued by Hirsch [1976], rests in economies of joint production, also called economies of scope. The challenge of strategy formulation is to distinguish between the economies, specify which link captures the advantage, and determine where the value-added chain should be broken across borders.

Consider, for example, 2 firms. The first firm sells differentiated products that are characterized by economies of scale but not scope in production. Under such conditions, the decision where to locate production for product line 2 is, in most regards, independent of the location of product line 1. On the other hand, the marketing function may be able to capture economies of scope by spreading the fixed costs of advertising brand labeling or sales forces over many products. Not surprisingly, firms that experience economies of scale in individual products but capture economic rents in marketing tend to be characterized by large scale production, transshipments of goods, and organizational structures designed around geographical regions [Stopford and Wells 1972].

Production in the second firm is characterized by economies of scope. As a result, the decision to locate production of a single line overseas changes the underlying economics for the production of a second product. A significant example of this kind of change has been the introduction of flexible technologies in the production process. There have been at least 2 major impacts of the introduction of flexible technologies on international strategies. The first is that insofar as these technologies result in capital substituting for labor, sourcing in low wage countries is less attractive. The second impact is that flexible technologies in assembly operations permit a finer match between product differentiation and previously unrealized market segments. For example, a major change in the automobile industry has been the increasing economies of scale in component production and economies of scope in assembly operations. The relatively smaller domestic firms have sought to overcome their disadvantage in component production through cooperative ventures, and frequently the larger manufacturers have sought to address specific market segments by contracting out, for example, the production of high-quality engines to upgrade their model diversity.²¹ By cooperative ventures in component manufacture and economies of scope in assembly, auto manufacturers segment markets so that the smaller partitions cannot support purely domestic operations of smaller manufacturers.

The final economy achieved by the multinational corporation consists of the value of the ownership of options written on movements in real factor and product prices. Movements in real factor and product prices stem from departures between disparities in changes in nominal exchange rates and price indices. In other words, there are relative price movements that are not reflected in movements in exchange rates, as predicted by a theory of purchasing power parity. Such losses occur, in fact, because of movements in the real exchange rates

Real Options

between countries. In the absence of relative price movements, changes in exchange rates reflect the difference in nominal price movements (that is, in inflation rates) between countries. Changes in real exchange rates reflect, instead, fluctuations in the real economic price of goods and factors of production between countries. The recent rise, for example, in the value of the dollar against the deutsch mark—a rise in value in excess of differences in inflation rates—means that the dollar cost of American labor has increased compared to the dollar cost of German labor. The real effective cost of American labor has, consequently, increased relative to that of German labor.

For the firm which can achieve flexibility to shift production, marketing segments, or product lines rapidly, fluctuations in these variables become a source of strategic advantage over the competition. To highlight the importance of flexibility, imagine a firm which has no strategic advantage over its competition. Its production technology resembles that of its competition, and the market for its outputs is competitive. It differs only from its competition in the sense that it is multinational; it operates production plants in many countries and sells in many different national markets.

In this context, a multinational network provides the strategic advantage of responding to shifts in real economic costs. Consider the response of the firm in relation to its competition given a change in an economic parameter, such as, a real depreciation of a country's currency. In effect, the effective cost of labor and domestically-priced materials falls in value relative to these costs incurred in production elsewhere. Firms of single nationality cannot respond to these profit opportunities, whereas the multinational firm can shift production to the low cost site and, thus, benefit from the undervaluation of the currency. Multinationality provides, then, a unique benefit in the form of the possibility to gain from fluctuations. In this kind of world, variance in real exchange rates implies profit opportunities.

Economic theory posits that over- or under-valuations of exchange rates are temporary disequilibria that are eliminated over time. A country whose currency is overvalued is eventually forced to depreciate through trade account deficits and the ensuing pressure on its ability to raise capital or finance through foreign reserves. Such a theory does not contradict the story told above. To the contrary, it reinforces the strategic importance of a multinational system. The firm that can respond quickly to a temporary disequilibrium has a real economic advantage relative to the competition. Despite the tendency to achieve a new equilibrium following some stochastic shock, the multinational corporation can profit from the fluctuations and oscillations in the adjustment path. In short, one of the key strengths of the multinational corporation is its capability to respond to environmental variance. Whether organizational structures or managerial systems have been, in fact, created to manage this flexibility is a rich area of further research.

**Market Definition
and Strategic
Groups**

The existence of the above economies illustrates the difficulty of market definitions under global competition. The case of Volvo in terms of its competitive profile in Sweden and in the United States is an interesting example. In the U.S., Volvo appears to be viewed as a luxury car in a similar class as BMW and Mercedes. In Sweden, Volvo appears to be viewed more as a producer of family cars, unlike the luxury cars offered by BMW and Mercedes. Despite the low market share, the United States market is of strategic importance in creating economies of scale in production of cars for Volvo in its domestically-located plants. Whereas Volvo competes against BMW and Mercedes in the United States in terms of perceived luxury, Volvo's cars have been traditionally viewed as distinctly differentiated in terms of luxury and carried a lower sticker price, reflecting a lower cost strategy relative to its competition. Interestingly, the success of Volvo's strategy in the United States has led to the introduction of the

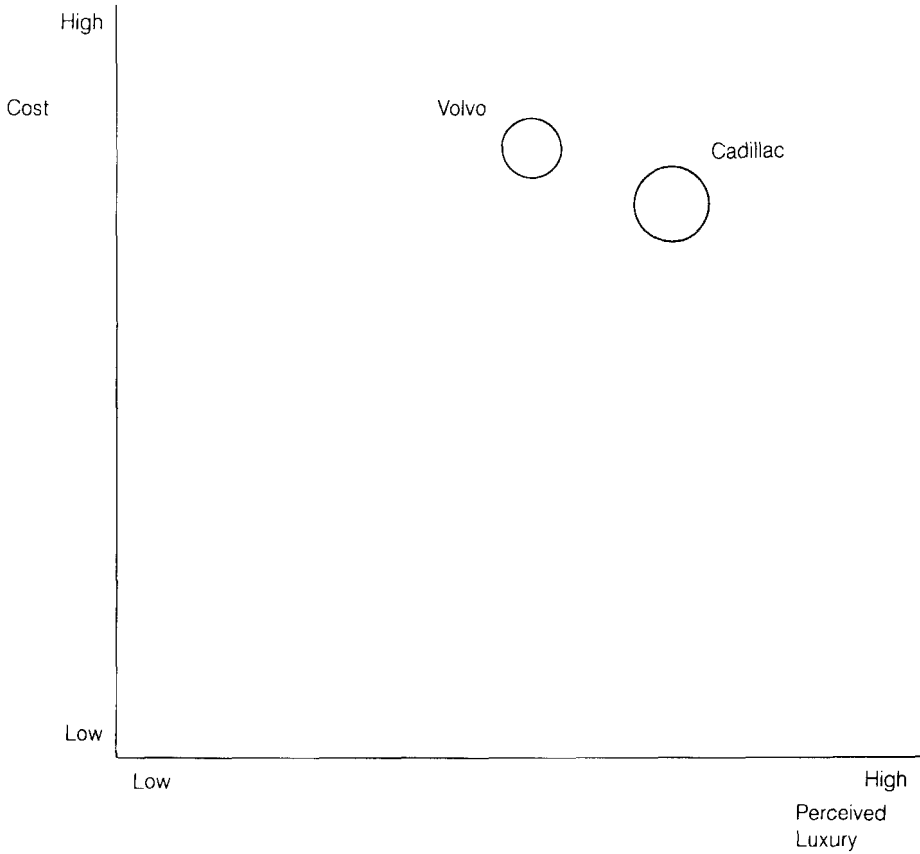
export model in Sweden and an increase on options on domestic models. Thus, Volvo has been able to capture over time global economies also in product design and in differentiation.

Volvo's marketing and production strategy illustrates 2 fundamental points. The first point relates to the importance of the marketing function in exploiting the potential in the upstream production links. Due to transportation and tariff costs, it is unlikely that Volvo can compete in the family car sector in the United States. As a luxury car, Volvo carries a premium price and, based on annual reports, admirably covers costs in its American sales. Furthermore, Volvo has established new cooperative ventures to achieve economies of scale production in conjunction with Renault in those components for which its own derived demand cannot generate minimum efficient scale.

The second point concerns the difficulty of defining strategic positions by market shares of globally competitive industries.²² Neither the United States nor the Swedish market share is a reliable guide to the competitiveness of Volvo. Figure 3 illustrates, for example, how Volvo might compare against Cadillac in the United States market. Market share data are clearly of no value. A better procedure is to determine the strategic assets that can be transferred internationally, and plot firms' competitive positions explicitly in terms of these assets and relevant national market characteristics. This plotting requires analyzing the value-added chain in terms of strategic links and barriers to entry into the foreign market.

FIGURE 3

Volvo versus Cadillac in the U.S. Market



The above analysis suggests that by adaptive marketing programs, Volvo is able to compete effectively in 2 separate "strategic groups." A strategic group is a group of firms following similar strategies within an industry.²³ For example, within the auto industry, certain firms or specific models will compete on low cost production and low price, whereas others will compete on luxury features. Because strategic advantages are relative to those of the competition, firms will belong to diverse strategic groups depending on differences in national markets, transportation, and barriers to arbitrage (such as, government pollution specifications).

Moreover, certain mobility barriers between groups in one setting may not be robust in other national climates. To pursue the auto example further, Volvo has a clear distribution advantage in the Swedish market and is a distributor for several foreign manufacturers. In the United States, distribution is dominated by American firms, further constraining Volvo's abilities to buy into the family car market.

When mobility barriers entirely preclude market entry, national markets can be viewed as separate industries. Industries in which barriers are not easily transferable or are not embodied in the quality or price of the good are likely to be broken down by national lines. Distribution is the most obvious candidate for a nontransferable barrier or strategic advantage. It is not surprising, therefore, that retail and wholesale operations that profit principally from distribution networks tend not to be multinational, though there are exceptions.

On the other hand, firms that are impeded from entry into national arenas but possess transferable strategic advantages in earlier stages of the value-added chain may enter through other forms of entry, such as, joint ventures, licensing, and franchising. There have been unfortunately few studies done on international strategic groups in general.²⁴ It appears that a promising area of research is to correlate entry strategies against the firm-specific package of transferable resources and the locational (nontransferable) barriers that characterize the targeted market and country.

In this context, global industries can be defined along both cost and market dimensions, though the 2 are highly interrelated. The cost dimension is derived from the economies that a multinational corporation can exploit through the production and marketing of standardized goods. The market dimension is derived from the capability of the multinational corporation to achieve global economies in upstream links of the value-added chain but to differentiate its products through physical adaptation and marketing to address market segments too small to support the activities of purely domestic firms.

CONCLUSIONS A critical dimension of global competition is the role of governments and other stakeholders, such as, labor unions, who dramatically affect the entry and exit strategies of firms. In addition, international competition is frequently complicated by a plethora of non-market interventions, including subsidies and state-owned enterprises. Under such conditions, strategy formulation for the firm—whether it be operating in domestic or international environments—cannot be restricted solely to the questions of investment allocations and product market selection. If one considers the competitive force driving an industry to include these stakeholders, many of the putative advantages of the multinational corporation are indubitably constrained and mitigated in importance.

It is, for example, an exaggeration to claim that the multinational corporation can costlessly shift production or sales given changes in real exchange rates. Production schedules are not easily changed; workers cannot be fired and later rehired in most countries as the winds of economic fortune change. On the other hand, it would be equally narrow to fail to incorporate how multinationality influences the entry bargain into a country in the first place. The very possibility that a multinational corporation can shut down or reduce production (and thus tax

payments) is a source of tremendous strength in entering a country, in acquiring privileged government support, and in enforcing its claim to property rights.²⁵ In this sense, the distinctive competence of some firms lies in their capabilities to manage stakeholders, including foreign governments.

Similarly, multinational corporations derive considerable bargaining strength through their control over the vertical links of the value-added chain. Though oil companies could not forestall the expropriation of most of their overseas oil fields during the 1970s, their international competitiveness switched from control over raw materials to control over distribution and marketing channels. The history of the successive negotiations between Mexico and Ford also illustrates the importance of controlling the vertical links of production. Over a period of 50 years, Ford delayed losing control over its Mexican operations by sequentially increasing the extent of its operations in return for maintenance of ownership.²⁶ The concept of the value-added chain is robust, therefore, not only in explaining what advantages firms accrue through international operations, but also in explaining the bargaining strength in relation to host governments.

It is, of course, possible that renewed protectionism and government intervention may reverse the historical evolution of exporting to the multinational network. On the other hand, government interference also has the property of creating profit opportunities for organizations with the flexibility and capability to respond in terms of production and financial decisions. It is ironically such interferences that cannot be easily forecast that further drive the competition between the constellations of bets that multinational corporations place on sourcing and product allocation.

Global positioning consists, therefore, of 3 elements. First is the transferring of strategic assets between different national markets that permit the exploitation of economies of scale, scope, learning, and real options. Second is the differentiation of products to adapt to national arenas and to exploit upstream competitive advantages. The third element is the flexibility and bargaining strength that a multinational network provides in managing stakeholders in diverse environments. Given the tremendous uncertainty in international markets, the hallmark feature of the multinational corporation is its evolutionary structure that transforms the variance between different national markets into profit opportunities and bargaining strength. In this perspective, the distribution of rewards and losses between firms may indeed be less affected by marginal shifts in strategies than by differential abilities in managing the environmental variance of world competition.

FOOTNOTES

1. An interesting comparison in intellectual history is to compare a book such as Servan-Schreiber's *The American Challenge* to the host of books written presently in the United States on the Japanese challenge.

2. A point not developed in this article is that if a firm's ability to borrow at low cost and without divulging strategic information from financial markets is circumscribed, then multiple product lines also provide the benefit of cross-subsidization, as described in many portfolio models of strategy formulation.

3. The interplay between macroeconomic parameters and corporate strategies is studied in greater detail in a forthcoming paper.

4. The term "distinctive competence" has an ambiguous meaning in the strategy/organizational behavior literature, referring to managerial perceptions and the actual status of a firm's strategic advantage. For a paper that explicitly examines management's perceptions, see Snow and Hrebiniak [1980].

5. For more dynamic approaches to firm behavior in imperfectly competitive markets, see Nelson and Winter [1982].

6. Economies of scope have been explored in the strategy literature conceptually by Ansoff [1965], and empirically by Rumelt [1974], though the former refers to such economies as "synergy," and the latter as "linked strategies."

7. The analysis comparing process technologies and product life cycles is similar to that of Hayes and

- Wheelwright [1979]; this paper extends their process technologies to include the entire value-added chain.
8. For a discussion of the hazards of contracting in terms of imperfect information, dedicated assets, and small numbers bargaining, see Williamson [1979], and the discussion in Kogut and Rolander [1984].
 9. For excellent reviews of the literature on firm-specific assets and foreign direct investment, see Caves [1982], and Hood and Young [1979].
 10. The discussion here echoes the profuse work that explains foreign direct investment in terms of its lower cost in transferring and controlling resources relative to other modes of entry, such as, exporting or licensing. In other words, foreign direct investment can be understood as one expression of the "internationalization" of markets. The author dissents from this point of view in its extreme form, not so much that it ignores comparative advantage—which it generally does not do—but far more because it ignores the impact on the revenue side due to the ownership of a multinational network. Licensing, for example, must not only be understood in terms of lower control costs versus loss of appropriability on technology or trademarks, but also in terms of the forsaking of a valuable option to expand if the market takes off. The history of Xerox is a fine illustration of this point. For an excellent review of the literature on internalizing markets in an international setting, see Rugman [1980].
 11. An exception to the emphasis placed on firm-specific assets is Aliber [1970] who argues that investor myopia attaches a risk premium on foreign debt but not on equity on foreign operations, thus encouraging foreign direct investment. It is not clear, however, how Aliber explains cross-hauling investments. This paper also does not discuss explicitly theories that explain foreign direct investment in terms of the comparative transaction costs of modes of entry, which are similar to the discussion here on internalizing markets. See Rugman [1980] for a review of the literature on internalizing markets in an international setting.
 12. The cognitive dimension is analyzed by Aharoni [1966] and Johanson and Vahlne [1977].
 13. Some of the empirical work on the international product life cycle is collected in Wells [1972].
 14. Davidson [1983] uses oligopolistic gaming models for his initial framework, though his book covers experience effects and economies of scale. Brooke and Remmers [1978] dedicate a short chapter to international strategy, whereas Channon [1979] extends product/market portfolio concepts (for example, the BCG) to the international arena without discussion of their robustness.
 15. The following section, especially regarding real options, is an elaboration of the paper by Kogut [1983].
 16. Two major exceptions are the articles by Niehans [1977] and especially Hirsch [1976].
 17. For an excellent discussion of the experience curve, see Abell and Hammond [1979].
 18. See, for example, "Japan's Traders Seek House Repairs," *Economist*, 3 December 1983, pp. 80-1.
 19. Teece [1980, 1982] points out that economies of scope are not a sufficient condition for the multi-divisional firm unless there are transactional costs between firms in designing contracts to share the economies generated by the production of 2 product lines.
 20. Lloyd [1983] points out that economies of scope can also be realized due to the property of essential jointness and risk diversification. By essential jointness, it is meant that 2 activities are technologically complements, such as, wool and mutton cultivation. Lloyd explains risk diversification in terms of the utility properties of firms. This line of argument appears unnecessary, as the greater utilization of capital resulting from less than perfectly correlated demand for 2 products will generate savings without positing firm utilities.
 21. Patterns of contracting in the auto industry are analyzed in Kogut and Rolander [1984].
 22. Market share has been the focus of numerous studies attempting to establish its relationship to various indices of profitability. For a review, see Wind and Mahajan [1981].
 23. The seminal work on strategic groups is Caves and Porter [1977]. See also Porter [1980].
 24. Some evidence regarding strategic groups in the international setting is discussed in Caves [1982], Chapter 4. For a thorough discussion on choice of entry mode, see Root [1982].
 25. The point regarding property rights and the multinational corporation is derived from several discussions with Donald Lessard over the past few years.
 26. This anecdote is borrowed gratefully from Lou Wells.

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