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CENTER DISCUSSION PAPER NO. 13

THE DECISION TO OWN A FOREIGN ENTERPRISE

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THE DECISION TO OWN A FOREIGN ENTERPRISE*

Stephen Hymer

The international operations of firms can take many forms. Some firms own and control enterprises in foreign countries; some have only indirect contacts through international markets; others have something in between; a minority interest, a licensing agreement, participation in a cartel, tacit collusion, etc. The purpose of this essay is to analyze some factors which determine how much ownership and control is profitable, in a given instance.

The approach is based on Coase's insight that the firm is an alternative to the market. "Outside the firm, price movements direct production, which is coordinated through a series of exchange transactions on the market. Within the firm, these market transactions are eliminated and in place of the complicated market structure with exchange transactions is substituted the entrepreneur coordinator, who directs production."[1] Given this assumption, Coase focused attention on market imperfections which lead firms to substitute centralized bureaucratic decision-making for de-centralized market decisions. Similarly, we can in the international context, compare the efficiency of the multinational firm relative to international markets as a means of providing incentives, transmitting information and setting prices. In this way we hope to analyze some of the conditions in which it is profitable to confederate, merge, or absorb a foreign customer, supplier or competitor.

Under this approach, we view direct foreign investment as an instrument of international business organization. Investing abroad is profitable, we hypothesize, because it allows a firm to increase its self-containment and thereby diminish uncertainty and reduce the threats of competition. We thus relate the theory of international capital movements to

the theory of prices and production via the theory of the organization of the firm. The arguments are straightforward and based on familiar tools of economic analysis; the novelty, if any, lies in the fact that the theory of the firm has not as yet been applied to the problem of international capital movements to anywhere near the fullest extent possible. No attempt at a comprehensive treatment is made here; instead a few examples - in particular the problems of selling technology or buying raw materials are examined in detail in order to illustrate the problem.

I

Before we analyze the reasons for direct investment, we might review a few important facts. The bulk of United States direct investment is accounted for by only a few firms - 60% by the fifty largest investors, 70% by the hundred largest, 90% by the three hundred largest[2] - which by and large tend to be in highly concentrated industries. A special tabulation of ninety leading investors shows, for example, that approximately 40% are in industries where the concentration ratio was greater than 75%, (for the United States as a whole, only 8% of the total value of shipments occurs in industries where concentration is this high).[3] A study by Dunning of American investments in the United Kingdom came up with the striking conclusion that nearly every American branch plant was in an industry where it was the dominant producer or one of a small number of producers: he estimated that "three quarters of the employment in the United States affiliated firms is concentrated in industries where the five largest competitors supply 80% or more of the total output." Other studies in Canada, Europe, and Australia, point in the same direction, though they are less conclusive.[4]

Though the United States is the home of many of the largest multinational firms, several Canadian and European firms also have substantial direct foreign investments. Surprisingly, when these foreign based multinational firms invest in the United States, they frequently choose the very same industries as Americans do when investing abroad. Petroleum products, biscuits, concentrated milk products, soft drinks, paper products, soaps, farm machinery, business machines, tires and tubes, and sewing machines are all examples of industries where American firms have substantial direct investment abroad, while one of the leading firms operating in the United States is a Subsidiary of a foreign firm.

We might note finally that much of the present direct investment is of long-standing duration. Most of the firms now prominent date the beginnings of their foreign activities to before 1914 and often to before 1900. In the United Kingdom, for example, where the best historical information is available, fully one-half of the employment in the United States controlled enterprises in 1957 was in firms established before 1914.[5] The 1957 census of United States foreign business investments showed that 65% of the total investment at that time was concentrated in plants that were established in 1946. Since few plants were established either during the Depression or the War, most of these plants were established at least before 1930, and many well before that. Direct investment by foreigners in the United States also appears to be in old, well-established subsidiaries, almost 80% of the investment is in enterprises established before 1941 and much of this doubtlessly dates from a considerably earlier period.[6] Once a direct investment is established, it appears to grow along with its industry; judging from this history, a firm thinking about foreign operations should do so with a long horizon in mind.

II

Many of the same factors enter into a firms decision to expand its boundaries across an international frontier as enter into its decision to expand within a country, but there are also a number of special problems arising from the fact the attivities are international while firms are national. We might begin with a brief discussion of these legal, political, linguistic and cultural factors which by and large militate against direct control in favor of indirect control and explain to some extent why international business integration is considerably less developed than national integration.

The most obvious deterrent to direct foreign investment is lack of information on the foreign economy, its language, its law, and its politics. Initially at least, an American firm attempting to operate abroad is likely to find itself at a competitive disadvantage relative to local firms - or in the case of colonial dependencies, relative to firms from the parent country - and there are obvious benefits from attempting to cooperate with better placed firms rather than supplanting them.[7] To some extent, the disadvantage of being a foreigner can be offset by filling managerial positions in foreign countries with nationals of the country in question, but this requires important innovations in the organization of the firm, for a man effective in one country because he is a citizen, may not be effective in a top management post of a multinational firm. Balancing the need to adapt to local circumstances with the centralizing requirement of international coordination will provide a continual source of stress within the multinational firm.

Discriminatory treatment by governments also favors indirect cooperation rather than direct ownership, since most governments attempt to protect their firms from the competition of foreigners. Even where such

deliberate discrimination is absent, the multinational firm has the inherent disadvantage of falling within the legal jurisdiction of more than one country and being subject to more than one set of legal constraints. An American firm operating in a foreign country must obey American laws as well as local laws - a disadvantage the local firm does not have. An international code of law which would reconcile even some of the more obvious conflicts is still a long way in the making.

Lastly, the difficulty of converting currency from one country to another provides an important deterrent to direct investment. An American firm pays its shareholders in terms of dollars and must measure its profits in terms of dollars; when investing abroad, it must attach a risk premium to cover possible changes in the exchange rate or other difficulties of transferring its funds out of the foreign country. In order to cover this risk premium, the rate of return to a multinational firm must accordingly be higher than that required for a purely national firm, and this favors indirect rather than direct relationships.

III

Why do firms still find it profitable to make direct investments with all their attendant difficulties? One reason may be the high cost of using international markets. Suppose a firm is considering how best to utilize abroad some advantage it possesses in production or marketing, for example, a patent, a differentiated product, a superior technique, or better access to capital and other factors of production. If the advantage is specific and well defined it may be feasible to license or otherwise sell it to an independent foreign firm and thereby avoid the difficulties of acquiring ownership of the foreign enterprise. But if the advantage is complex and diffuse, it may not be possible to arrive at a sales agreement specifying exactly what is being sold and on what terms. For example, if the foreign enterprise needs managerial and technical help on call to deal with a wide variety of problems as they emerge, it may be impossible to set down in advance exactly what help the American firm is expected to give and what remuneration it will receive in each instance. Instead it may be more efficient to enter into a long-term contract in which profits from co-operation are shared and the decision handled administratively rather than bargained for in each case. As Coase put it,

> The institution of the firm greatly reduces the need to specify prices in each of the many transactions that occur because one long term contract is substituted for a series of short ones. Instead of bargaining each day over the terms on which factors are employed and physical resources are used, an agreement covering a long period is reached which settles terms of remuneration and gives to the coordinator the authority to direct the use of co-operating elements in an optimal fashion. The firm is thus an instrument for economizing on market costs.[8]

A second reason, suggested by Coase, is discriminatory government policy. Firms may be created in order to escape government regulation because "exchange transactions on a market and the same transactions

within a firm are often treated differently by governments or other bodies with regulatory powers."[9] In the antitrust laws, for example, certain practices such as price discrimination are prohibited if they result from a collusive agreement with a foreign enterprise but will escape regulation if the agreement is between branches of the same multinational firm. Another instance stems from the fact that the tax liability of a firm may depend upon its form of organization. In some cases, of course, the discrimination may go the other way and favor indirect relationship; a foreign government may have a more lenient foreign exchange policy on royalties paid abroad than upon dividends to cite one possible case.

A third consideration is uncertainty and the possibility of diversification. A merger of enterprises whose profits are inversely correlated will result in a more stable combined profit stream, since random effects will tend to cancel each other. Such negative correlation is almost always present between the buyers and sellers of a product, since a price change that hurts one of them benfits the other. In the case of selling an advantage discussed above this consideration enters as follows; in order to decide the price at which the advantage is to be sold, a calculation must be made on expected future use and revenue. But this can be done only imperfectly and the errors effect the buyer and seller in opposite ways. If the realized revenue exceeds the expected, the buyer gains and the seller loses, if the realized falls short of the expected, the seller gains and the buyer loses. Direct investment is one way to minimize the cost of uncertianty since it provides for sharing of profits and thus a certian degree of insurance.

The diversification factor is particularly important in the case of direct investment in foreign raw material production. Commodity

markets are notoriously unstable and a firm heavily dependent on raw materials is often in a highly vulnerable position. If it must buy the raw material in the open market, it will be subject to great fluctuations in profits as the commodity market fluctuates between scarcity and plenty. This instability is at least partly reduced by direct investment, because what the firm loses as manufacturer when prices rise is to some extent offset by what it gains as producer, and vice versa for price falls. The diversification motive is, however, on a different footing than other motives because it does not require merger of the separate enterprises. Each shareholder of the firm can stabilize his own earning to whatever degree he desires by buying an appropriate mixture of shares in the companies specializing in different lines. But particularly in the case of foreign trade, where information is very poor, it may be easier for management, via direct investment, to diversify for its shareholders.

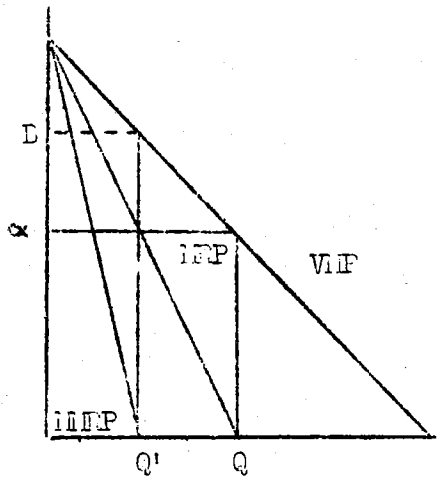
Imperfect competition, resulting from fewness of firms, provides a fourth reason for direct investment. In international markets where there are a large number of competitors, a firm can be reasonably sure it is receiving or paying a competitive price. In these cases, it is resonable to accept the market price and use the market to effect its transactions. But when numbers are few, the firm cannot rely on the market forces but must bargain with its oligopolistic competitors over price; direct ownership of a foreign enterprise is one of the strategies at its command.

For example, consider again the firm selling an advantage. To some extent it is a monopolist with respect to that advantage; whether it is profitable to use a market or to engage in direct investment depends on whether it is also selling to monopsonists or to a large number of

competitive buyers. In figure 1A VMP is the value of the marginal product of the advantage (the marginal physical product of the advantage times the price of the commodity in whose production the patent is used.) If there are a large number of buyers, it is also the demand curve for the patent; competition of many small producers will drive abnormal profits to zero, and the price of every factor of production, including that of the patent, will be bought into equality with the value of its marginal product. Given this demand curve, (and assuming for simplicity that the marginal cost of the patent is zero), the owner of the patent will charge α for it, the user will produce output Q, the marginal revenue product will be zero, i.e., equal to marginal cost, and the quasi rent of the patent will be at a maximum.

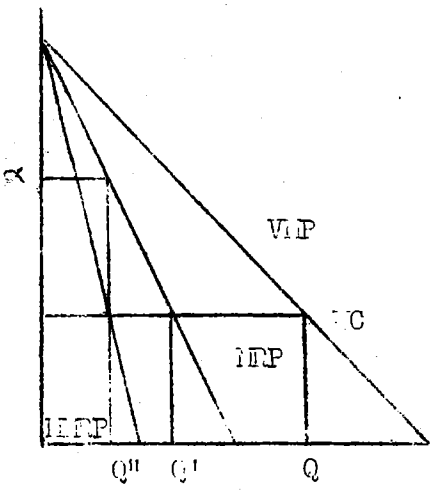
However, if there is only one or a few buyers of the advantage in each country, this analysis will not hold. The buyer(s) will not compete to drive their profits to zero, but will adopt some different strategy. Suppose, for example, there is only one buyer, who acts as a naive Bertrand monopsonist and attempts to maximize his profits subject to the price set by the seller. In this case he will equate the price of the advantage to its marginal revenue product (marginal physical product times marginal revenue) rather than to the value of the marginal product as before. The demand curve facing the owner of the advantage is then no longer VMP but MRP. The optimal price for the patent remains at alpha (this is an arbitrary outcome due to the assumption that the demand curve is linear), but production will now occur at Q'. The quasi rent for the patent is reduced by $\alpha(Q-Q')$, while the profits earned at the manufacturing stage rise from zero to $(\beta-\alpha)Q'$. The motive for branch plant ownership comes from the dead weight loss in global profits resulting from a movement from Q to Q'. The increase in profits

FIGURE 1A



VMP=value of the marginal product of patent
MRP=marginal revenue product of patent
MMRP=marginal marginal revenue product
∝=price charged for patent

FIGURE 2A



VMP=value of the marginal product of bauxite in production of aluminum
MRP=marginal revenue product
MC=marginal cost
MMRP=marginal marginal revenue product
∝=price of bauxite

to the manufacturing stage, under the assumption that it is monopolistic, is less than the loss of quasi rents to the owner of the patent; if the patentee is able to obtain ownership and direct control of the manufacturer, it can restore the output to Q and maximize profits. This is, of course, a highly simplified description of the problem of selling a patent; but increased complexity, though it increases relevance, will not alter the fundamental point that there is an advantage to removing bilateral oligopoly.

Another case of vertical integration, identical in principle to the case of the patent just described, but somewhat more complex, occurs when a raw material is produced and used in oligopolistic industries. To simplify the exposition, we may call the raw material bauxite, and the manufactured product, aluminum. The analysis is not entirely irrelevant to these industries, but the choice is intended primarily for illustration and should not be interpreted literally. In figure 2A, VMP is the values of the marginal product of bauxite in the production of aluminum, while MC is the marginal cost curve of producing aluminum, assumed for simplicity to be constant. If there is perfect competition in both the bauxite and the aluminum industries, the curves are also the demand and supply curve of bauxite, and production will occur at their intersection Q. We are interested, however, in the case where each stage of production is monopolized. Assume first that the aluminum producer is a monopolist while the bauxite industry is perfectly competitive. The aluminum producer will equate the price of bauxite to the marginal revenue product rather than the value of the marginal product and production will be restricted to Q'. Now suppose that bauxite production is also monopolized. The bauxite producer might then take the marginal revenue product curve (MRP) as the demand curve for bauxite, and charge

α to maximize its profits at the point where production is Q" and the marginal marginal revenue product (MMRP) equals the cost of producing bauxite. As in the case of the patent, this sequential monopoly pattern reduces total profit and provides an incentive for international integration through branch plant ownership in order to maximize global profits.

An incentive for direct investment also arises in cases of horizontal oligopoly. A firm in an industry that is highly concentrated here and abroad will find itself in oligopolistic competition with its domestic and foreign rivals. Since the number of firms is few, they are likely to recognize their mutual interdependence and engage in oligopolistic rivalry, one form of which is direct investment. In the limit, one could imagine that one firm, through direct investment, acquires ownership of all the firms in the industry and with complete world-wide control fully maximizes global profits. This would result in perfect co-ordination and the highest profit possible. Typically, however, international business integration is far less complete; several large firms, a few from the United States and perhaps one or two from Europe compete and collude throughout the world through international trade and investment, The amount of direct foreign investment a firm should make will then depend not only on its competitive position but also on its aggressiveness and that of its rivals.

An interesting example of how this works in practice is found in the following old, but still relevant, case study.

> "... at the turn of the century, the British tobacco industry was literally 'invaded' by American capital. Restricted in its sales by a high tariff wall imposed on U.S. cigarettes, the American Tobacco Company acquired the young and prosperous firm of Ogdens, Ltd. in September, 1901, and straight away launched an extensive publicity campaign to sell cheap cigarettes.

> The Chairman of the U.S. company at that time made no secret of his intensions, viz: 'to obtain a large share of the tobacco trade both of England and the Continent,' and he threatened to spend up to £ 6 million in doing this. The reaction of the British producers was prompt, for within a month of the purchase of Ogden's, thirteen of the leading tobacco companies had amalgamated and formed themselves in Imperial Tobacco Company, with an issued capital of £ 14 1/2 million. Then followed several months of cut-throat competition between the two concerns ... Eventually, a market sharing agreement was reached in September, 1902; Ogden's became part of the Imperial Tobacco group, which was given the monopoly of the British and Irish markets, whilst the United States and its dependencies were to be supplied by the American Tobacco Company. A new concern, the British-American Tobacco Co., Ltd., was set to handle the remainder of the export business with allocated factories both in the United States and in the United Kingdom ...[10]

A firm's international operations depend therefore on trials of strength as well as objective factors such as cost and demand conditions. It may agree with other firms to divide markets according to spheres of interest (for instance, the American firms restricting themselves to Latin America, the European to Asia and Africa, and all competing in Canada), or it may co-operate more closely and establish joint ventures, or it may clash sharply with other firms and establish its own branch plant in every market of adequate size. Predatory competition will not usually last for long; more than likely, after a while, a certain stability will be achieved and the industry will settle into some market sharing pattern. However, at present, there are great strains on the prevailing patterns due to the removal of trade barriers and the opening up of new markets in underdeveloped countries, and there is something of a scramble for markets occurring as each firm tries to establish a base for future growth. A firm thinking of foreign operations should not forget the advantages that sometimes follow from jumping quickly.

IV

The motives for international integration just discussed have a direct bearing on the question of how best to finance foreign operations. A firm engaging in international operations can raise funds for its foreign subsidiary locally in the country of operation or else supply capital from the parent office. In deciding the appropriate ratio between local borrowing and direct investment, a firm should not only consider interest charges and terms of repayment in each capital market, but also the special problems associated with internationality and the need for control.

The basic pattern of financing direct investment is illustrated in Figure 2 and Table I. In Figure 2a we see that on average United States firms with branch plants abroad finance about 60 per cent of total assets from the United States, while borrowing about 40 per cent locally in the country of operation. Figures 2b and 2c, however, show that American firms make a sharp distinction between equity and non-equity capital. The United States share of equity capital averages 85 per cent while the share of non-equity capital is only 25 per cent. The reluctance to sell equity securities abroad is further illustrated in Figures 2d and 2e which show that firms on average finance only about 8 per cent of total assets through equity securities, in contrast to about 31 per cent in the form of creditor capital.

Foreign firms investing in the United States follow similar rules of finance as is illustrated in Table I; they hold nearly all the equity securities of their subsidiaries themselves, while borrowing a large part of non-equity securities in the United States, which, to them, is the foreign country.

In contrast to what these tables show one might have expected that American firms would raise all funds required for foreign operations in the United States and avoid, as much as possible, borrowing in foreign countries. The United States is the richest country in the world and has one of the most highly developed systems of financial intermediaries; it is usually thought to be one of the cheapest places to raise capital. Since those American firms large enough to have substantial foreign investments usually have well established access to this relatively cheap source of funds there would seem to be no point in looking elsewhere for finance. Indeed one might even hypothesize that some firms would go beyond their traditional activities and, acting as financial intermediaries, use their New York connections to raise funds in the United States to lend to unaffiliated foreign concerns. But the evidence does not seem to support this view.

Exchange rate risks probably play an important role in explaining why firms prefer to borrow abroad. When comparing the costs of borrowing at home to the cost of borrowing abroad, the firm must add a risk premium to the home interest rate and in the usual case this well outweigh any initial difference in interest rates that might have existed. If we let r equal the capital costs of borrowing in America, r' the capital cost of borrowing abroad, and t the risk premium, the firm bases its decision to borrow on whether

$$r + t \gtreqless r' \ .$$

Although it might seem that little could be said <u>a priori</u> about which will be greater, in fact there is a presumption that the left hand side exceeds the right, i.e., that the cost of borrowing at home will be greater than the cost of borrowing abroad. This is because international arbi-

trage will ensure that the interest rates in two countries does not differ by more than the cost of professional arbitrage. Letting a equal this cost, then typically,

$$r + a \geq r' .$$

The primary occupations of firms with direct foreign investments are mining, manufacturing, or distribution, and not finance: in the difficult act of arbitrage they are likely to be at a comparative disadvantage relative to the banks and other financial institutions which specialize in these activities. It is likely therefore that t is greater than a and therefore that (r + t) is greater than (r + a) and a fortiori greater tahn r'. It will pay the firm, then, to borrow abroad. There may, of course, be exceptions; some large international firms, at a given point of time, may have better facilities for transferring capital between two countries than financial firms, but by and large this will not be true, and it will pay firms to leave arbitrage to the arbitrageurs. Division of labor applies here as elsewhere. The firm is well advised to minimize its uncovered foreign investment to the greatest extent possible.

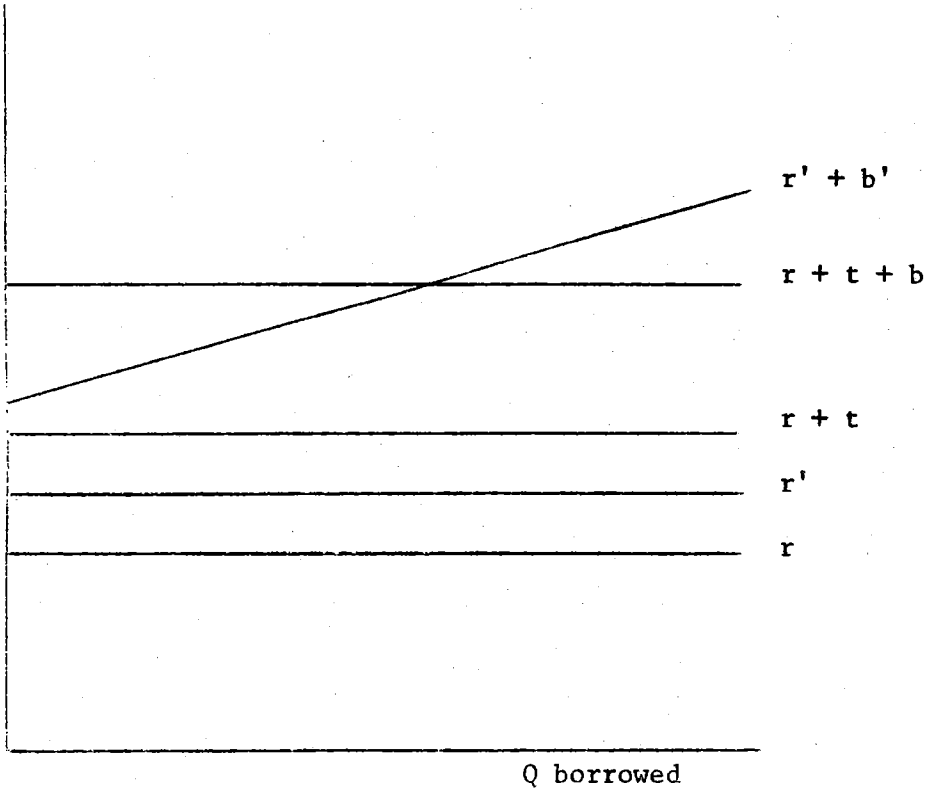
Notice that the same principles apply to firms investing in the United States. They too should borrow locally, if they can, and avoid taking a position. Thus to a multinational firm, the question of where capital is cheapest is not simply a question of prevailing interest charges but depends also on its nationality. There is a sort of relativistic effect, each firm finds it profitable to borrow, for its foreign enterprises, in the country of operations.

Borrowing costs modify, but do not reverse, the above analysis. Strictly speaking, r' is the rate of return on loans made in foreign countries while the relevant consideration for the firm is the amount

it pays as borrower which exceeds r' by the cost of borrowing, b', - the size of which depends on particular circumstances. If borrowing costs abroad are very high, it may lead a firm to finance part of its foreign business with capital from home.

Figure 3 illustrates the critical rate of borrowing costs. The cost of borrowing abroad is the sum of r', the prime interest, plus b', the cost of borrowing. It is assumed in the diagram that borrowing costs per unit rise with increased borrowing: at first the firm makes use of short-term finance (bank credit, trade loans, etc.) but as these easy sources are exhausted, costs rise and the curve has in general an upward slope. The cost of borrowing in the United States is the sum of three factors: the prime rate of interest at home, r, the risk premium t, and borrowing costs b, which are specific to a particular firm. All these are assumed to be constant for simplicity (a reasonable assumption, perhaps, if the branch plant is small relative to the size of the total parent firm). The level, however, will depend on the particular firm involved, since due to a host of considerations a firm may either be able to obtain funds in the United States at close to the prime interest rate, or else have to pay considerably more. The proportion borrowed locally and the proportion financed from the United States depend upon where the two top curves intersect. The point of intersection depends upon the rate at which borrowing costs abroad rise, which in turn is determined by the state of the capital market in the foreign country. In most underdeveloped countries, once the easy sources of bank credit are exhausted there is usually little scope for further borrowing, and the r' + b' curve becomes highly inelastic. In more highly developed countries, the slope is more gradual and for this reason American firms are able in Europe to borrow a higher per cent of their subsidiaries' needs than they can in Canada or in underdeveloped countries.

FIGURE 3



r = prime rate of interest in the United States

r'= prime rate of interest abroad

t = transactions' cost on foreign investment

b = borrowing costs in the United States

b'= borrowing costs abroad

V

The above argument suggested a firm will typically find it profitable to maximize local borrowing subject to the constraint of rising borrowing costs. In addition there is a further perhaps more important constraint stemming from the need to maintain near complete ownership of equity securities. Because of the special disadvantages of selling equity securities, financial flexibility is severely constrained. In the first place the parent firm will usually want to maintain control over the foreign enterprise and thus must hold 51 per cent (less in some cases) of equity securities. More important, in order to fully maximize world-wide profits, most firms will want to hold a much higher share than that. If a firm sells equity securities in its foreign operation, some method will have to be worked out to determine the share of profits earned by the subsidiary. This will be exceedingly difficult to do. Part of the profits of the subsidiary comes from its affiliation with the parent firms and the technical, financial, and managerial advice it is entitled to. Strictly speaking the affiliate should be charged for these services and the amount deducted from profits. But what charge is reasonable? Recall that the reason direct ownership was chosen over an indirect relationship was precisely because it was difficult or inefficient to use the market to handle transactions, i.e. because it was difficult or impossible to find an appropriate price. The same difficulties apply to distributing profits. The profits of a firm with world-wide enterprises are interdependent and cannot be allocated to any particular subsection; should a firm allow local participation, it might reintroduce some of the very conflicts direct investment is designed to avoid. Local shareholders, interested only in the profit of their particular subsidiary, would not take into consideration the repercussion of

their policies on branch plants in other countries. Maximization of global profits, the goal of direct investment, will be frustrated.

We may state the argument more precisely as follows: direct investment occurs because the profits of an enterprise in one country, π_1, are dependent on the profits of an enterprise in another country, π_2, i.e.,

(1) $$\pi_1 = F(\pi_2).$$

To maximize global profits $(\pi_1 + \pi_2)$ the following must hold:

(2) $$\frac{d\ -\pi_1}{d\ \pi_2} = -1.$$

Suppose, however, that the firm from country 1 owns only λ per cent of the enterprise in country 2. Then, it will maximize $(\pi_1 + \lambda\pi_2)$ which occurs when

(3) $$\frac{d\pi_1}{d\pi_2} = -\lambda$$

which only partially exploits global interdependence when λ does not equal 1.[9]

A few examples will illustrate the conflict between the international parent firm and the local investor. Consider a parent firm deciding whether or not to expand output in A, its low-cost partially-owned subsidiary, or to contract it in B, its high-cost fully-owned one. Concentration of production in the low-cost plant would increase total profits, but the firm shares the gain in profits in A with local shareholders, while it stands the loss in B alone. What is best for global profits will not be best for its own profits. If, on the other hand, it owned both plants fully, it would be free of this contradiction and could

maximize total profits. The corollary of this is that a local investor would be unwilling to participate in a venture with an international firm which has the power to siphon off the profits of this joint venture to one of its wholly owned subsidiaries located elsewhere.

A similar problem arises in the cases of vertical integration and may be illustrated by using the example of a firm selling a patent. The real marginal cost of using the patent is zero. To maximize global profits, then, the branch plants should use the patent up to the point where the marginal revenue product equals zero. But how will profits be allocated between enterprises? If there are local shareholders in the foreign country, the profits accruing to the branch plant must be separated from the profits of the parent firm: to do so, some price must be used to value the patent. But if a price is charged, managers, attempting to maximize profits of the branch plant, will accordingly economize on the use of the patent. Production will be restricted and total profits lowered. The parent firm will bear the loss unless it removes the conflict by buying out the local shareholders.

In conclusion, we might summarize our analysis of financial strategy as follows. Under normal circumstances a firm would like to minimize its net investment in any country by borrowing locally to the amount of its foreign assets in that country. It is constrained from doing so first by high borrowing costs resulting from imperfections in the capital market and second by the disadvantages of selling equity securities. We note that the lower are interest rates and borrowing costs abroad, the less burdensome to the firm will be the charges on capital raised locally, and the more profitable the enterprise. Cheap capital in a country therefore tends to attract international operations because of the leverage it provides the parent firm.

VI

We have tried in this paper, to look at optimal international industrial organization from the point of view of the firm. For illustrative purposes we relied heavily on the example of a firm selling an advantage but it should be clear that the major findings are not limited to that case. It should also be noticed that in some of the examples cited, the most profitable choice to the firm would not be the optimal one from the point of view of the nation. In particular, where international business integration has as its purpose or effect increased monopoly power a serious antitrust problem may arise; in the future government action to countervail this type of direct investment may be an increasingly important aspect of international operations.

We might also note the possibility that it may sometimes pay governments to make direct investments. For example, some agricultural commodities prominent in international trade are grown by a large number of small producers and sold to a highly concentrated manufacturing industry. The producing countries could probably increase their share of revenue if they formed a selling cartel to countervail the monopsony of the buyers. Even if feasible, this solution is non-optimal because it involves the wastes of sequential monopoly. It is not possible in this case for firms to integrate backward through direct investment because there are too many small sellers but it might be possible for countries to integrate forward by aquiring control of some of the enterprises in the buying country that manufacture and distribute their product. This would not only remove the wastes of bargaining but also enable more rational planning. For example, the manufacturer who decides on market promotion counts as a cost the increase in producer price that results from increased demand. Much of this price increase is a rent to the producers and from the point of view of the

producing countries should be maximized, not minimized. Forward integration could accomplish this. In addition, the problem of price instability would be mitigated. The fluctuations in price as a result of short term shifts of inelastic demand and supply schedule merely transfer income from producer to consumer benefitting no one and causing uncertainty for both. With vertical integration, the cost of the instability will be removed since producer and consumer are one. In short, since firms integrate backward for these reasons, it may be worthwhile for countries to integrate forward. Perhaps underdeveloped countries, to solve some of their problems as primary producing nations, should make direct investments as well as receive them.

NOTES

* My thinking on this subject has been greatly influenced by Professor C.P. Kindleberger who first suggested the topic to me and thereafter as teacher and thesis adviser continuously shaped its development.

1. R.H. Coase, "The Nature of the Firm," Economica, New Series, Vol. IV, (1937). pp. 386-405. Reprinted in Stigler and Boulding AEA Readings in Price Theory, pp. 331-351.

2. United States Department of Commerce, United States Business Investment in Foreign Countries, Washington: Government Printer, 1957, p. 144.

3. The list of firms was obtained from an investigation of annual reports and SEC registration forms and compared for coverage with the aggregate figures published by the Department of Commerce. Though it is somewhat out of date, it is doubtful that the features referred to have changed significantly. Asset size was obtained from the 1961 Fortune Directory and refers to 1964. Concentration ratios were taken from the U.S. Senate, Concentration in American Industry, Report of the Subcommittee on Antitrust and Monopoly pursuant to S. Res. 57 (85th Congress), Table 17, p. 23. The firms were classified according to their major product, but their direct investments are often restricted to one or two specialties in which the firm has particular advantages. Concentration ratios in these specialties are typically much higher: a better industry definition would therefore show an even stronger association between investment and high concentration. Moreover, many firms were in industries where product differentiation was important and where the concentration ratio is a poor index of market position because of the difficulty of defining an industry. The classification of firms was as follows.

25-49% Concentration		50-74% Concentration		75-100% Concentration	
Meat Products	4	Biscuits & Crackers	1	Cereal, Breakfast Foods	2
Dairy Products	2	Corn Wet Milling	1	Chewing Gum	2
Canned Fruits & Vegs.	3	Abrasives	1	Flavoring for Soft Drinks	3
Flou & Meal	1	Asbestos	1	Hard Sruface Floor Coverings	1
Cement	1	Photographic Equipment	1	Tires & Inner Tubes	5
Refractories	1	Cleaning & Polishing Soaps & Glycerine	2	Flat Glass	1
Surgical Appliances	1	Plumbing Fixtures	2	Tobacco	1
Mattresses & Bed Springs	1	Elevators & Escalators	1	Aluminum	1
Medicinal, Chaemical, & Pharmaceutical Preparations	6	Vacuum Cleaners	1	Tin Cans & Other Tinware	2
Paints & Varnishes	1		11	Razors & Razor Blades	1
Tractors & Farm Machinery	5			Computing Machines & Typewriters	4
Oil Field Machinery & Tools	1			Sewing Machines	1
Printing Trade Equipment & Machinery	1			Shoe Machinery	1
	28			Motor Vehicles	6
				Locomotive & Parts	1
					32

One firm, Construction & Mining Machinery, was in industry with less than 25% concentration, for Twenty-six others, it was not possible to assign concentration ratios due to the diversified nature of the firms.

4. J.H. Dunning, American Investments in British Manufacturing Industry, London: George Allen and Unwin, 1958, p. 115. Moreover, this is probably an underestimate, since differentiated products play an important role in some of the unconcentrated industries foundation garments, proprietary medicines, beauty and toilet preparations for example.

See I. Brecher and S.S. Reisman, Canada-United States Economic Relations, Ottawa: Royal Commission on Canada's Economic Prospects, 1957; F.A. Southard, American Industry in Europe, Boston: Houghton Mifflin Co., 1931, (especially his comments on the electrical equipment industry, p. 36, telephone and telegraphic equipment, p. 55, petroleum, p. 60, 68-69, motor vehicles, p. 29, mines and metals, p. 93, phonographs, p. 108; and locks and keys, p. 108), G.Y. Bertin, L'investissement des firmes estrangeres en France, P.U.F., 1963; D.T. Brash, United States Investment in Australian Manufacturing Industry, Doctoral Dissertation, Australian National University, August, 1965.

5. Ibid, p. 95. Moreover, these statistics refer to the date on which the branch plant began operating. The relevant concept is the date on which the parent firm first went abroad. If data were available on this basis, it would indicate a much smaller per cent of investment being accounted for by new entrants.

6. U.S. Department of Commerce, 1957 Census, op. cit. The 1950 census found that almost 60 per cent of the investment at that time was in plants established before 1930. Other evidence on the venerability of most foreign investors can be found in the case histories cited in Lewis (1938), Marshall, Southard and Taylor (1936), Phelps (1936), Southard (1931), and Brash (1965).

U.S. Department of Commerce, Foreign Bisness Investments in the United States, 1961.

7. If direct investment is nonetheless chosen, the cost of acquiring information and maneuverability can in part be viewed in terms of capital theory since some of it is non-recurring. Once a firm makes the effort to establish operations in a foreign country, as many firms have done, a stream of future possibilities is opened up, and it is their future benefits which must be weighted in the initial decisions.

8. Coase, p.

9. Ibid., p. 335.

10. Dunning, op. cit., pp. 30-31. Later the American Tobacco Company was forced to divest itself of its interest in this company.

11. The analysis assumes firms try to maximize total profits legally belonging to shareholders in the home country. An alternative assumption is that firms view all dividends, including those paid to shareholders in the home country as a cost and attempt to maximize retained earnings. Letting d_1 and d_2 be dividends paid in country 1 and country 2 respectively, the firm maximizes $(\pi_1 + \pi_2 - d_1, - d_2)$ instead of $(\pi_1 - \lambda\pi_2)$ as above. Provided dividends in each country do not depend on profits earned in that country, i.e., they depend only on total profits and the conditions prevailing in the capital market in each country, equity securities introduce no distortion in the production decision of the type described above result. I am grateful to Mr. E. Penrose for this point.

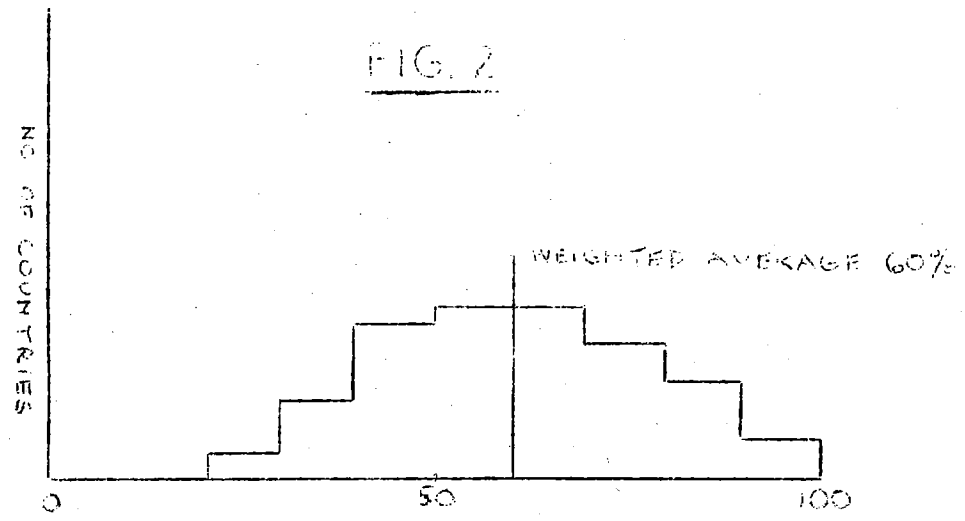
TABLE 1

UNITED STATES AND FOREIGN PATTERNS OF FINANCING DIRECT INVESTMENTS

	Direct Investment by U.S. in Foreign Countries (1957) (per cent of)			Direct Investment by Foreigners in U.S. (1959) (per cent of)		
	Equity Capital	Debtor Capital	All Capital	Equity Capital	Debtor Capital	All Capital
U.S. Share	86	25	61	14	81	50
Non U.S. Share	14	75	39	86	19	50
	100	100	100	100	100	100

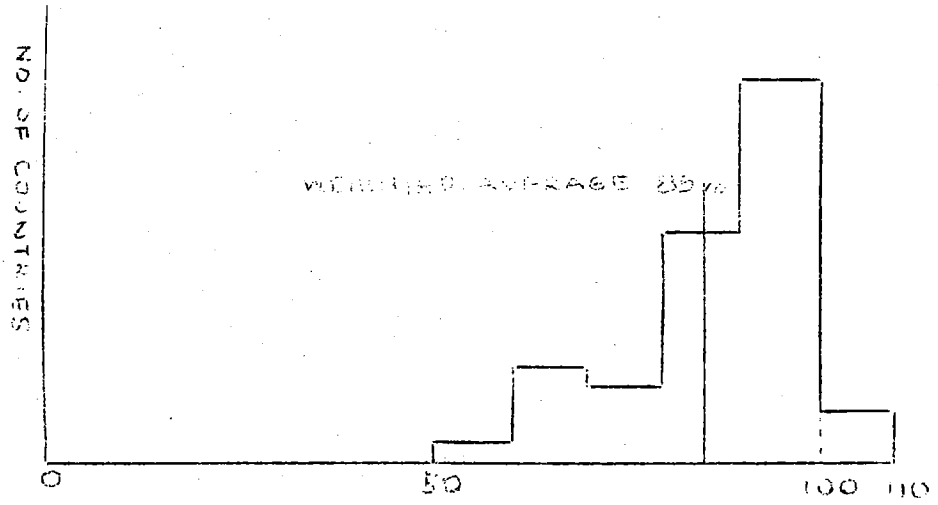
SOURCE: United States Department of Commerce, U.S. Business Investments in Foreign Countries: Census of 1957, and Foreign Business Investments in the United States.

FIG. 2



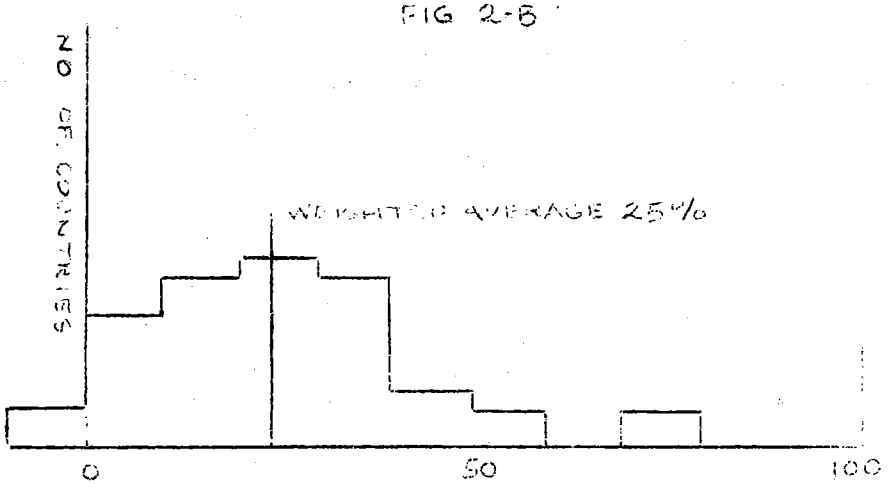
↑ U.S. SHARE OF TOTAL ASSETS ↑

FIG 2-A



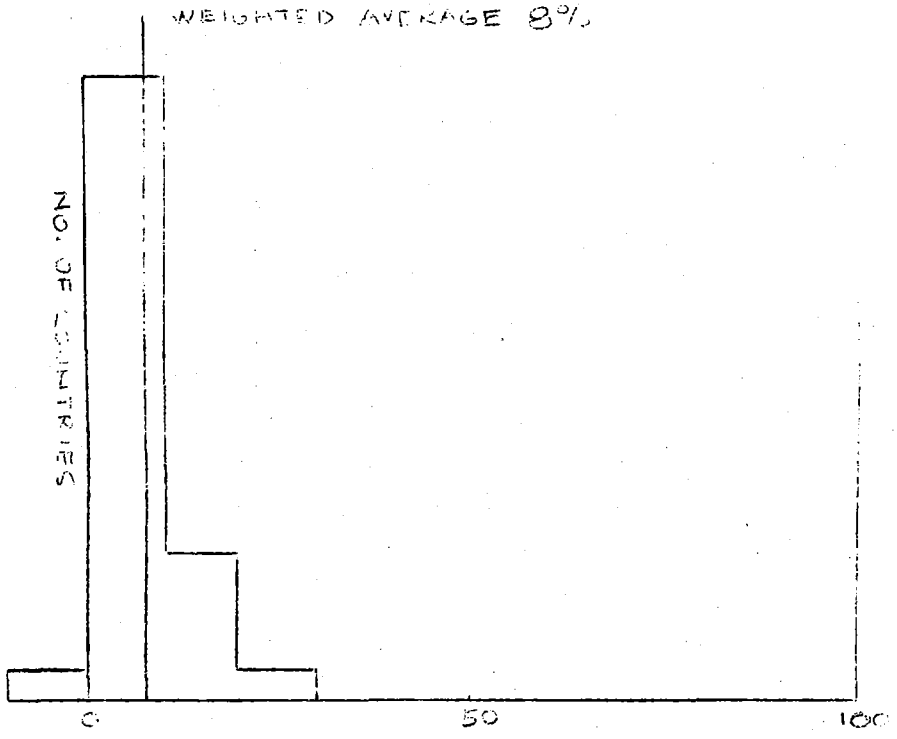
↑ U.S. SHARE OF EQUITY CAPITAL ↑

FIG 2-B



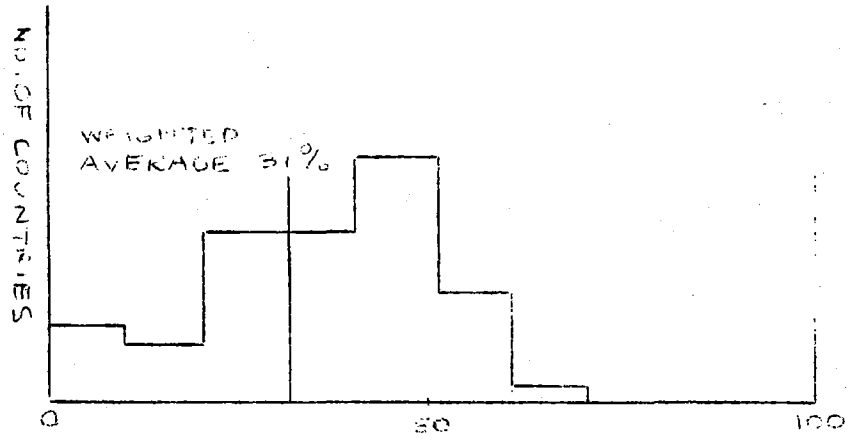
↑ U.S. SHARE OF CREDITOR'S CAPITAL ↑

FIG 2-C



EQUITY CAPITAL BORROWED ABROAD
AS PERCENT OF TOTAL ASSETS

FIG 2-D



CREDITOR CAPITAL BORROWED ABROAD
AS PERCENT OF TOTAL ASSETS

FIG. 2-E