WORKING PAPER
ALFRED P. SLOAN SCHOOL OF MANAGEMENT

LARGE SCALE DIRECT OPEC INVESTMENT IN
U.S. ENTERPRISE AND THE THEORY OF
FOREIGN DIRECT INVESTMENT--A CONTRADICTION?

Stephen J. Kobrin
Donald R. Lessard*

WP 786-75 (April 1975) REVISED May 1975
LARGE SCALE DIRECT OPEC INVESTMENT IN U.S. ENTERPRISE AND THE THEORY OF FOREIGN DIRECT INVESTMENT--A CONTRADICTION?

Stephen J. Kobrin

Donald R. Lessard*

WP 786-75q (April 1975) REVISED May 1975
I. INTRODUCTION

While most of the discussion about the implications of the accumulation of vast dollar reserves by members of the Organization of Petroleum Exporting Countries has focused on macroeconomic issues, there has been a growing concern with their ability to purchase equity positions in U.S. business enterprises of sufficient magnitude to provide potential for managerial control. Even though a Congressman's warning that, "they (small oil exporting nations) can buy our nation like meat in the market place..."\(^1\) can be dismissed as hyperbole, it is clear that both the level and intensity of discussion of OPEC foreign investment in the U.S. have increased. The Congress is investigating the extent and nature of foreign ownership and rather strict reporting requirements are being considered.

The intensity of the reaction to potential OPEC investment results from the combination of two factors. First, concern over foreign investment in the U.S. has mounted in recent years as its magnitude has increased. Second, OPEC investment, in particular, has been singled out due to the economic and political issues associated with the Mid-eastern problem in general. The primary concern appears to be with foreign direct investment (FDI) in which the investor exercises or has the potential to exercise management control, rather than foreign portfolio investment (FPI) in which the investor has only a financial interest.\(^2\)

This article addresses the extent to which the shift of wealth to oil exporting countries will result in large scale direct invest-
ment in major U.S. enterprises by government or private interests of the oil exporting nations. The paper concludes that large scale FDI in U.S. enterprise by OPEC members is unlikely. We will attempt to show that a conclusion to the contrary would conflict with existing theory and evidence about the determinants of foreign direct investment and ignore evidence of past behavior on the part of OPEC investors or would require an assumption that FDI will be utilized to achieve ends which can be attained more efficiently and effectively through other means.

II. PORTFOLIO AND DIRECT INVESTMENT: THE THEORETICAL BASIS

Large scale flows of foreign investment are by no means a new phenomenon. Just prior to the start of World War I 25 to 40 percent of gross domestic savings of the three major creditor countries, Great Britain, France, and Germany, were invested abroad. However, the vast majority of pre-1914 investment was portfolio rather than direct. Investors purchased financial instruments—typically bonds—which promised a higher rate of return than that available at home. Given the increase in the relative importance of equity markets, it is now recognized that portfolio capital flows also take place in order to diversify investment risks. This suggests, of course, that capital will not flow in only one direction—to the country where capital is most scarce and therefore its productivity highest—but will move in many directions as investors continuously seek to balance risks.

In contrast, a large proportion of post World War II foreign investment has been direct rather than portfolio. This is especially true for U.S. investment abroad, but it also is becoming the case for non-U.S. investment, including investment into the U.S. It is perhaps misleading to classify direct investment as a capital flow at all. Its essence is control in the managerial sense; what Kindleberger refers to as "the locus of decision making power." Dunning goes
directly to the heart of the matter; "...direct investment implies the investing unit (usually a business enterprise) purchases the power to exert some kind of control over the decision taking process of the invested in unit (again, usually a business enterprise.)" Direct investment is typically a flow of resources or factor inputs such as management, technology, and marketing skills that may or may not be accompanied by a flow of capital. Capital may be transmitted from the source country, equity may be obtained in exchange for management or technology, or very typically, it may be raised locally (both initially and through the reinvestment of earnings). "Direct investment represents not so much an international capital movement as capital formation undertaken abroad." Given that FDI entails a cross-boundary transfer of resources, often across considerable distances, to compete with local enterprise some advantage is required to compensate for imperfect knowledge of the host environment and the added costs imposed by both geographic and cultural distances. Clearly, under perfectly competitive conditions no such advantage could exist; any initial managerial or technical advantage possessed would be readily available to local enterprise. However, the world of foreign direct investment is not perfectly competitive. As Kindleberger notes, FDI is a function of imperfections in both goods and factor markets. The foreign investor typically exploits a monopolistic advantage which allows him to earn a higher return from a given asset than can be extracted by a local investor. Restrictions on the free flow in information allow the foreigner to offset the disadvantages distance imposes through advantages such as superior management or technology. Caves observes that FDI is a direct function of the ability to capture monopoly rents, either through horizontal investments in oligopolistic industries characterized by differentiated products or through vertical integration in extractive industries.
In summary, portfolio investment is an international movement of capital motivated by a desire to increase returns and/or reduce risk. Direct investment, on the other hand, implies managerial control and is characterized by flows of a variety of factor inputs including management, technology, and marketing skills which are not readily available in markets or by mechanisms which bypass existing imperfections and barriers and provide access to world markets. These resources may or may not be accompanied by capital. The only essential conditions are: 1) that a direct investor possess some advantage versus host country competitors and 2) that factor or goods market imperfections exist which allow him to contain the advantage; to capture a monopoly rent that will offset his inherent disadvantages vis-a-vis local enterprise.

In general, capital alone is neither necessary nor sufficient since imperfections in capital markets are much less significant than those in most other factor markets. Therefore neither will an enterprise (country) with a great deal of capital but no other advantage be able to earn monopoly rents nor will an enterprise (or country) with a monopoly advantage in some other factor market or with control over some final market be severely hampered by a lack of capital.

III. THE LIKELIHOOD OF OPEC FDI

The investment decision of the OPEC countries can be seen as part of a larger consumption-investment trade-off. Presumably, OPEC decision makers seek to provide a sustained level of income over future years. In doing so they decide between current consumption and investment and among three basic types of investment assets: oil reserves, domestic productive capacity, and claims (either financial or direct) against other countries. If for purposes
of discussion we consider as potential investors only those countries whose internal absorptive capacity, either in terms of current consumption or domestic capital formation, is limited relative to revenues, then a major decision which they face is the type of foreign claim—portfolio or direct investment. We do not define direct investment as a specific level of ownership (e.g. 10 or 25 percent) but rather as holding a sufficiently large equity position so as to provide the potential for managerial control and attempting to exercise that control.

If the possibility of large scale OPEC FDI is to be taken seriously, it must be shown that:

1) OPEC investors possess some monopoly advantage which would enable them to compete with established enterprise in the industrialized world, and/or

2) circumstances exist which would motivate a rational OPEC investor to concentrate assets to the point where the potential for managerial control exists.

Both conditions must be satisfied for FDI to be the optimal choice versus other potential investment vehicles if returns are the sole criterion. The first condition establishes at least the potential for the monopoly rent necessary to fully exploit (and, as we will explain below, justify) the managerial control obtained by the OPEC investor. An advantage which satisfies the first will in general be sufficient to establish the second, but it is not a necessary prerequisite. For the second condition to hold when the first is not met, circumstances must exist which make FDI a rational
means to achieve objectives other than return on invested capital. However, even under these circumstances it must be demonstrated that FDI is an efficient and effective means to achieve these objectives for it to represent a rational alternative. It is our position that given both the resources of OPEC members and conditions in the U.S. at present, it is unlikely that either condition will hold true.

IV. THE CHARACTERISTICS OF OPEC INVESTORS

One cannot predict the likelihood of a given course of action on the part of OPEC investors in a vacuum. Some statement must be made about their world view and their objectives. Robert Solomon, Advisor to the Board of Governors of the Federal Reserve System, has summarized the likely objectives of OPEC investors: 14

"They will look for safety and stability in the value of the investments they choose. These investments after all represent a transformation of national wealth, from oil in the ground to income-earning assets to be used in the future when the oil has been used up...

"They will look for diversity in the investments they choose ...[They] are unlikely to wish to put too many eggs in any one basket; that is, they may be reluctant to own too large a proportion of the world supply of any one investment medium, whether it be U.S. Treasury bills, gold, Euro-DM, or any other obligation. In technical terms, while they may enjoy being monopolists in supplying oil, they would want to avoid being monopsonists in acquiring financial assets.

"They may in some cases look for anonymity in their placements of funds. This will depend in part on political relations. It seems likely that nations that are actively in the process of increasing their participation in foreign companies may be sensitive, justifiably or not, to the dangers of 'conspicuous investment' that could somehow be 'nationalized.'

"They will seek to maximize yield, subject to the objectives mentioned above."
In summary, while OPEC investors would appear to be interested in maximizing yield, the special considerations delineated by Solomon suggested that they are likely to be more risk averse and more interested in maintaining a "low profile" than most private U.S. investors.

V. COMPETITIVE ADVANTAGES OF OPEC INVESTORS

Assume that OPEC investors purchase a substantial interest in a going concern and attempt to exercise their newly gained control. While exceptions can undoubtedly be found, it appears reasonable to assume that their only sources of potential competitive advantages, vis-a-vis U.S. competitors, are their abundant capital and control over the production of petroleum. While several of the OPEC countries are developing rapidly—in terms of access to educational and medical facilities and social and physical infrastructure as well as income per capita—they simply do not have the accumulated industrial base necessary to provide a technological or managerial advantage versus U.S. competition. The orientation of domestic firms which gives them an advantage in international markets has developed in response to the unique characteristics of the American market—more than a century of high levels of income and a relative scarcity of labor to capital and, more recently, a massive government supported research and development effort. On balance, it is unlikely that a given OPEC investor would have—and be able to contain—a significant managerial or technical advantage versus potential U.S. competitors.

As stated above, capital is unlikely to provide an advantage where capital markets are relatively free from imperfections, as is the case in the U.S. Shares in existing firms will sell at prices which will provide only a normal return for the risk involved. Further, new opportunities
which promise excessive returns in relation to their risk will be readily undertaken and therefore, there will be no inventory of them. The direct investor must bring something to the enterprise which increases its return and hence its value. To the extent that capital markets do aggregate capital and spread risks in an adequate fashion, capital alone will provide no such advantage. Capital will provide a significant advantage only under very specific circumstances such as the existence of large scale investment projects which are indivisible for some reason and therefore, favor large scale investors. It is difficult to think of many situations of this type in U.S. markets. They would be more likely in smaller industrialized economies with relatively closed capital markets and much more likely in less developed countries.

In fact, several OPEC purchases of potentially controlling interests in foreign firms—including Krupp and Deutsche Babcock in Germany—appear to have been motivated by such capital market imperfections and not by a desire for control. In both cases, the investments involved purchases of large family or corporate holdings in firms with little or no publicly traded stock. Such situations are extremely rare among major U.S. corporations.

Petroleum is a more likely source of competitive advantages, and "downstream" investment would appear to be a natural strategy. However, there are several reasons why this may not be the case. First, it is not obvious that "downstream" investments would increase the monopoly rents accruing to producer countries. Currently, these are shared with other investors—the multinational oil companies—whose political power undoubtedly increases the power of the industry as a whole. Second, to a considerable extent, the multinational oil companies provide a vehicle for policing "appropriate" cartel behavior. Direct competition among various OPEC countries in final markets might prove to be much less stable.
Third, downstream investments would increase the proportion of managerial and technological resources relative to petroleum resources which would be required in order to earn a monopoly rent. This would, if anything, reduce the comparative advantage and hence the market power of OPEC investors. Finally, downstream investment would increase OPEC exposure to risks associated with the future value of petroleum and petroleum based products.

VI. CONCENTRATION AND RATIONAL INVESTMENT STRATEGIES

To acquire sufficient holdings in individual firms to exercise managerial control would imply a portfolio which is heavily concentrated in a few assets for any conceivable OPEC investor. While this might be optimal if it results in higher returns due to an ability to capture a monopoly rent, it also implies bearing some potentially diversifiable risk—risk which carries no reward in an efficient capital market.

It is reasonable to assume that OPEC investors are risk averse—that they demand a higher return in order to bear risk—and their investment behavior to date certainly bears this out. Therefore, any policy calling for a concentrated asset portfolio must produce returns sufficient to offset the additional risk. However, as suggested by the earlier section, OPEC investors are unlikely to possess advantages which make this possible.

The magnitude of the unnecessary and uncompensated additional risk borne by holding a concentrated portfolio is substantial. Studies of the U.S. stock market show that the total risk (measured as the variance of holding period returns) of a portfolio falls rapidly with diversification. Solnik, for example, shows that portfolio risk falls to 30 percent of the average risk of individual securities with only 20 securities and decreases only slightly, to 27 percent, as the number of companies is increased to 50.

Internationally, given the relatively low correlations between outcomes
Figure 1

RELATIONSHIP BETWEEN DIVERSIFICATION AND TOTAL PORTFOLIO RISK

in different countries, the effect of diversification is even greater. In the same study, Solnik shows that portfolio risk falls to 12 percent of the average level for individual stocks with a holding of 50 firms' securities. Figure 1 illustrates the relationship between portfolio diversification and risk within the U.S. and across national boundaries.

Under a series of simplifying assumptions, it is possible to estimate the incremental return relative to the equilibrium level which an OPEC investor would have to expect to earn on directly held assets in order to justify the additional risk of holding a less than fully diversified portfolio. Table 1 clearly shows the extent to which portfolio risk (measured by standard deviation of monthly returns) is decreased as the securities of more firms are included in the portfolio. Column two, which reflects the risk of portfolios comprised solely of U.S. securities, shows a decrease in risk from a standard deviation of 25% with one security to 13% for the entire market. Column four, reflecting portfolios of world-wide composition, shows an even greater decrease, from a standard deviation of 30.7% to 10.5%. Columns three and five translate these measures into additional risk premia which would be necessary in order to provide an investor holding a less than fully diversified portfolio with the same return to risk tradeoff available in equilibrium on fully diversified holdings. The results suggest that it is extremely unlikely that OPEC investors could generate sufficient "extra" returns on direct investments to offset the risk penalty. For example, an OPEC investor with equal holdings in five companies of average risk worldwide would have to expect to earn an additional 3.1 percent on investment relative to the equilibrium level to justify taking the extra risk. This is substantial since the equilibrium return, under the same set of assumptions, involves a risk premium of 5.5 percent over the rate of interest on default free bonds. In other words, the OPEC investor would require a risk premium more than one and one-half times the equilibrium level.
For Intermarket world market, the difference is approximately in line with the systematic risk of the U.S. In a risk-free interest rate of 6% and a risk premium for the market portfolio of 6% for the U.S. and 5.5%.

Assuming a risk-free interest rate from less end of 6% and a risk premium for the market portfolio of 6% for the U.S. and 5.5%.

Absorbed standard deviation figures from less end of 6% and a risk premium for the market portfolio of 6% for the U.S. and 5.5%.

<table>
<thead>
<tr>
<th>0</th>
<th>10%</th>
<th>0</th>
<th>13.0%</th>
<th>0</th>
<th>13.0%</th>
<th>0</th>
<th>13.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>9%</td>
<td>11.3%</td>
<td>7%</td>
<td>13.4%</td>
<td>9%</td>
<td>13.9%</td>
<td>9%</td>
<td>13.9%</td>
</tr>
<tr>
<td>9%</td>
<td>12.3%</td>
<td>7%</td>
<td>14.6%</td>
<td>9%</td>
<td>16.2%</td>
<td>9%</td>
<td>25.0%</td>
</tr>
<tr>
<td>13%</td>
<td>13.9%</td>
<td>7%</td>
<td>16.2%</td>
<td>10%</td>
<td>16.2%</td>
<td>10%</td>
<td>16.2%</td>
</tr>
<tr>
<td>31%</td>
<td>16.5%</td>
<td>7%</td>
<td>25.0%</td>
<td>5%</td>
<td>25.0%</td>
<td>5%</td>
<td>25.0%</td>
</tr>
<tr>
<td>10%</td>
<td>30.7%</td>
<td>7%</td>
<td>5.5%</td>
<td>1%</td>
<td>5.5%</td>
<td>1%</td>
<td>5.5%</td>
</tr>
</tbody>
</table>

\[ \text{Return} = 6\% + 6\% = 12\% \]

\[ \text{Normal risk-portfolio returns} \]

\[ \text{Standard deviation of return} \]

\[ \text{Premium required (b)} \]

\[ \text{Standard deviation of additional risk} \]

\[ \text{Premium required (a)} \]

\[ \text{Additional risk premium as a function of portfolio concentration} \]

Table 1
The one possible source of monopoly rents, investments whose value might be increased by vertical integration with the OPEC investor's petroleum base, would imply an even riskier portfolio since an even larger proportion of the investor's total assets would be directly affected by factors impacting on the world petroleum market.
VII. OTHER MOTIVATIONS

It is possible that OPEC investors could obtain equity positions in U.S. firms which provide the potential for managerial control without attempting to exercise it; they could remain "silent" partners. It should be clear from the argument to this point, however, that in the absence of exogenous motivating factors--unless FDI serves as a means to achieve a "non-economic" objective--this would not be a reasonable choice. The act of concentrating one's capital to allow purchase of any significant equity position entails a risk. The risk can not be justified unless one is prepared to exercise some control to increase returns. A "silent" partner is so only in the public sphere. Given Solomon's summary of their objectives and their behavior to date, one would not predict that OPEC investors are likely to assume unnecessary risk.

Motivations for OPEC FDI in the United States have been suggested which do not relate directly to maximizing financial returns. For example, ownership has been justified as 1) providing a means for obtaining technology necessary for development, and 2) as a basis for securing supplies of crucial resources. (The two are of course related.)

The proposed Iranian purchase of an interest in Pan Am falls in the first category. In exchange for capital, Pan Am has apparently promised to supply the technological and managerial aid necessary to develop the Iranian airline into a major world carrier. A desire for the second type of investment was revealed by a spokesman for a group of Mideastern investors. He noted that they were particularly interested in direct investment in the food industry to secure supplies in times of crisis.25

In both instances, one must believe that managerial control is essential for direct investment to be the most efficient or even effective
means of obtaining the objective in question. It would seem that if the objective is to secure technology it should be purchased directly. The same would hold for an assured supply of resources. In either instance a contractual arrangement should allow for purchase of the needed input without requiring a direct investment. The only possible counter argument is that the desired resources are not available on the open market; that a corporate interest is necessary to secure them. However, if that were in fact the case, it is hard to see why an enterprise that was not "in extremis" (as Pan Am undoubtedly is) would sell equity to an investor whose avowed purpose is to obtain otherwise unavailable technology.

In the second instance, it is even more difficult to see why managerial control is either necessary or sufficient. By assuring sources of supply in times of crises, the OPEC investors presumably mean preventing retaliation in the event of another boycott. However, the 1973-74 boycott was enacted against nation states not individual firms. One would expect nation states to retaliate. Thus, if the government imposed restrictions on shipments of food to Kuwait for example, the fact that Kuwaiti investors owned 30% of a domestic firm would be of little importance.

On the other hand, portfolio investment would imply a shared interest with domestic investors. To the extent that government moves against OPEC holdings also threatened these "bedfellows," portfolio investment would provide greater protection.

It should be noted that the argument must be qualified to the extent there are significant imperfections in the capital market. One can think of several possibilities that would motivate an investor who would otherwise be satisfied with a strictly financial interest to seek some degree of control. For example, capital markets may not provide access for minority shareholders
or the "rules of the game" may allow discrimination between "insiders" and "outsiders". Along the same lines, information may not be freely available--"inside information" may have a real value--or shareholders may perceive that their interests differ from those of others and may be ignored by the current board and management. In all of those instances, a rational investor may be forced to seek some degree of control or representation to protect his interests. However, all of these factors are more likely to be operative in Europe, where equity markets are relatively thin, where a few financial institutions play a dominant role, and where regulation is less pervasive than in the U.S. Most of the major publicized instances of FDI in industrial firms by OPEC members have taken place in Europe. In contrast, direct investment in the U.S. has tended to flow into real estate which is a thinner and less regulated market and which requires less ongoing managerial input than industrial enterprise.

VIII. CONCLUSIONS AND POLICY IMPLICATIONS

First, it should be noted that it is not at all clear that any significant foreign direct investment by residents of the OPEC nations in the U.S. exists or is even planned. When the mist of hyperbole clears, the remaining evidence is both scanty and contradictory. Second, there is no more reason to be concerned about OPEC direct investment than there is about direct investment in general. Nations -- at least the larger and more powerful nations -- should be able to accept foreign investment without compromising their security.

In any event, given an assumption of rationality, it does not appear reasonable to expect large scale flows of FDI from the OPEC nations to the U.S. Direct investment in a business enterprise requires a transfer of resources other than capital or a control over markets which OPEC investors do not possess.
To expect direct investment requires an assumption that OPEC investors are willing to accept the risk entailed in concentrating capital without its benefits. To date OPEC investors' behavior does not appear to have been irrational.

We believe the policy implications of our conclusions are straightforward. In spite of the substantial dollar holdings being accumulated by OPEC members there is little "danger" of a massive purchase of U.S. industry by "foreign interests." Consequently, we see no need for special concern or special legislation or regulation to deal with the problem. We believe that it continues to be in the interest of the United States to encourage the free flow of capital internationally and to accept foreign investment, whether it is portfolio or direct.

If foreign investment, either in general or from specific nations, raises special problems, they should be solved with specific policy instruments. If allowing foreign investment in certain sectors or industries is likely to compromise legitimate security interests, then FDI can easily be barred from sensitive areas. Similarly, if we are concerned that certain foreign investors are likely to impose restrictions that violate legislation prohibiting racial or religious discrimination, that problem can be approached directly. On balance, it would seem that if there are legitimate concerns about the behavior of certain foreign investors (as there sometimes are about domestic investors), the obvious solution would seem to be to control their behavior and not to prohibit investment. The baby should not be thrown out with the bath water.

One further point cannot be ignored. As of year end 1973, FDI
in the U.S. amounted to almost $18 billion. However, U.S. FDI abroad totaled over $107 billion. The point is obvious. We cannot expect equitable and fair treatment of U.S. direct investors abroad while at the same time restricting foreign investors at home because they happen not to be U.S. citizens. This does not mean that we cannot control their behavior. However, there seems to be little basis for a xenophobic reaction to foreign ownership in the largest and most advanced of the industrial nations.
FOOTNOTES

* Assistant Professors of Management, Sloan School of Management, Massachusetts Institute of Technology. The authors would like to thank Morris Adelman, Henry Jacoby, Charles Kindleberger, D. Quinn Mills and James Paddock, for their constructive comments on earlier drafts.

1 Industry Week, October 7, 1974, p. 15.

2 Foreign direct investment usually is defined as ownership of a specified percentage of a firm's shares by a foreign investor (often 25 percent but sometimes 10 percent.) A more meaningful definition, but one which is admittedly more difficult to measure, is ownership of a sufficiently large equity position to provide the potential for managerial control.


4 Ibid, p. 446.

5 This point was first developed by Herbert G. Grubel, "Internationally Diversified Portfolios," American Economic Review (December, 1968). Donald R. Lessard, "World, Country, and Industry Relationships in Equity Returns," (SSM WP 766-75) provides up-to-date estimates of gains from international diversification.

6 However, Ragnar Nurkse, "International Investment Today in the Height of Nineteenth Century Experience," Economic Journal (- 1954) suggests that much of this portfolio investment involved more than simple arms-length financing transactions. He notes that in the case of the U.K. it went largely to countries with recent English immigration, and often paid for U.K. produced capital goods.

7 Sodersten, op. cit.

8 Charles P. Kindleberger, American Business Abroad, (New Haven: Yale


11 Charles P. Kindleberger, American Business Abroad, Chapter 1.


13 This view of the OPEC decision problem is developed more completely in Tamir Agmon and Donald Lessard, "Financial Markets and Oil Revenues: An Analysis of the Role of Financial Markets as Limiting on Production and on the 'Recycling' of Funds Among Consumer Countries". (unpublished draft, February 1975)

14 Solomon's remarks were contained in an address, "The Oil Price Impact on the International Accounting Conference. They were quoted from: Peter B. Kenen, "OPEC Investment in the U.S. -- What Should Worry Us and Why?", Princeton University, 1974 (mimeographed).

15 This point of view has been very thoroughly developed in the application of the product life cycle theory to international trade and investment. A businessman reduces risk by developing products for his domestic as opposed to a foreign market. Thus, as the U.S. market has historically been characterized by shortages of labor relative to capital and relatively high levels of per capita income, U.S. firms have tended to develop labor saving products and processes, and products which appeal to high income consumers. For a good overview of the life cycle concept see: Louis T. Wells Jr., ed., The Product Life Cycle and International Trade (Boston: Division of Research,
These might include corporations in serious financial difficulty (e.g., Lockheed or Pan Am) where new shares could not be sold readily or due to the complexity of claims by various parties or enormous investment projects (e.g., the trans-Alaskan pipeline or the SST).

The third argument was suggested by Henry Jacoby.

Although control can often be exercised through holdings of 10 percent or less of a firm's shares, this requires the cooperation of the firm's management and the tacit acceptance by other investors. If an OPEC investor's attempt at exercising control threatened the interests of either of these groups, a much larger proportion would be necessary to assure control.

Although the foreign financial holdings of all OPEC investors are projected to reach up to $200 billion by 1980 (Morgan Guaranty, World Financial Markets, January 21, 1975), it is unlikely that the holdings by any single investor group would reach more than, say, 10 billion with the possible exception of Iran where the state appears to be the major investor. While this appears to be a very large amount, it should be recognized that the total market value of U.S. stocks alone is in excess of $600 billion, and that all traded securities in the U.S. are in excess of $1.5 trillion. World figures for stocks are in excess of $1 trillion while all traded financial assets exceed $3 trillion. The sum of the book values of shareholders equity in the 10 largest U.S. corporations is in excess of $100 billion. For the top 25, more than $150 billion.

Modern financial theory suggests that investors will demand a risk premium—a higher expected return to compensate for risk—only for that proportion of an asset's risk which cannot be diversified away within an
economy (or the world if capital markets are assumed to be integrated). Therefore, an investor holding a less than perfectly diversified portfolio is bearing unnecessary risk which is not compensated.


22 Lessard, op. cit. explains the underlying concepts and provides empirical evidence on the power of international diversification.

23 Solnik, op. cit.

24 The capital asset pricing model, a key element in modern financial theory, postulates that, in equilibrium, expected returns on risky assets are composed of two elements—the rate of interest on risk-free bonds plus a "risk premium" which is a linear function of the security's risk in the context of a fully diversified portfolio. The relationship between expected return and risk for a less than fully diversified portfolio will be less favorable than the equilibrium return-risk tradeoff since the concentrated portfolio retains risks which are potentially diversified and, therefore, do not command a risk premium. We employ the capital asset pricing model to determine the incremental return, above the equilibrium level, which an investor would have to earn on a concentrated portfolio in order to match the prevailing return-risk tradeoff. For an excellent summary of portfolio theory and the capital asset pricing model see Jack Clark Francis and Stephen H. Archer, Portfolio Analysis (Englewood Cliffs, N. J.: Prentice-Hall, 1971).

25 In a recent interview, the representative of a group of Mideastern investors interested in Europe indicated that their maximum participation would be 40%. The Wall Street Journal, December 9, 1974, p. 15.
