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AN INVESTIGATION INTO THE POWER OF MULTINATIONAL CORPORATIONS AND AN ANALYTICAL EVALUATION OF THE DETERMINANTS OF U.S. FOREIGN DIRECT INVESTMENT IN THE EUROPEAN ECONOMIC COMMUNITY: A SPECIAL CASE OF MULTINATIONAL OIL COMPANIES

The University of Oklahoma PH.D. 1982

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MAHMOUD MOTAVASSELI

Norman, Oklahoma

1982

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CHAPTER I

INTRODUCTION

Purpose of the Study

In recent years, increasing attention has been given to the importance of foreign direct investment by multinational enterprises and its contribution to home and host countries. Many economists have identified one or a few factors as the determinants of foreign direct investment in host nations. This study claims that there are many quantitative as well as non-quantitative factors of socio-economic and political nature that determine the flows of direct investment abroad. This study also examines the efficiency of multinational corporations and their role in the economic development of the home and host countries. The major areas concerning foreign direct investment and the role of multinational corporations that are examined in this study include: an analysis of the motivation, nature and philosophy of capital movement; an evaluation of the efficiency of multinational corporations

from a pareto optimality point of view; an analysis of the role of international corporations in the economic development of home and host nations; an examination of essential factors influencing and/or causing structural change in the flow of foreign direct investment; and a review of the development of U.S. multinational oil companies. Throughout this study, U.S. multinational oil companies are used as "special case" of multinational corporations. U.S. direct foreign investment in the petroleum industry is the primary concern of the empirical chapter.

A Brief Historical Review of the Position of U.S. Direct Investment Abroad

During the period 1950-1979, the position[1] of U.S. direct investment abroad expanded rapidly and changed considerably in composition both by area and by industry.[2] At year end 1950, the U.S. direct-investment position was $11.8 billion; this figure increased to $192.6 billion in 1979, with an annual average growth rate of 10.1 percent. In 1950, position shares were divided almost equally between developing and developed countries but by year end 1979, 72 percent of the total share was in developed countries (Table 1-1 and Chart 1-1).

---

[1]The position is the net book value of U.S. direct investors' equity in, and outstanding loans to, their foreign affiliates.

[2]The U.S. Department of Commerce has defined direct investment to include U.S. equity in the following types of enterprise.

1) Foreign corporations in which individual persons or groups of affiliated persons who normally reside in the United States own 25 percent of the voting securities.
2) Foreign corporations in which U.S. citizens own 50 percent or more of the publicly held voting securities (if (1) above is not satisfied).
3) Proprietorships, partnerships, or real property (other than the personal use by the owner) held abroad by U.S. residents.
4) Foreign branches of U.S. corporations.

TABLE 1-1

U.S. Direct Investment Position Abroad, 1950 and 1979

	Amount		Distribution		Average annual rate of growth, 1950-79
	1950	1979	1950	1979	
	Millions of dollars		Percent		
All areas	11,788	192,648	100	100	10.1
Petroleum	3,390	41,553	29	22	9.0
Manufacturing	3,831	83,564	32	43	11.2
Other	4,567	67,531	39	35	9.7
Developed countries	5,696	137,927	48	72	11.6
Petroleum	981	31,821	8	17	12.7
Manufacturing	2,984	67,366	25	35	11.3
Other	1,731	38,741	15	20	11.3
Canada	3,579	41,033	30	21	8.8
Petroleum	418	9,168	4	5	11.2
Manufacturing	1,897	19,237	16	10	8.3
Other	1,264	12,628	11	7	8.3
Europe	1,733	81,463	15	42	14.2
Petroleum	426	18,555	4	10	13.9
Manufacturing	932	41,246	8	21	14.0
Other	374	21,662	3	11	15.0
Other	384	15,431	3	8	13.6
Petroleum	137	4,008	1	2	12.4
Manufacturing	156	6,882	1	4	13.9
Other	92	4,451	1	2	14.3
Developing countries	5,736	47,841	49	25	7.6
Petroleum	2,169	7,231	18	4	4.2
Manufacturing	847	16,198	7	8	10.7
Other	2,720	24,412	23	13	7.9
Latin America	4,577	36,834	39	19	7.5
Petroleum	1,303	4,568	11	2	4.4
Manufacturing	781	13,220	7	7	10.2
Other	2,493	19,046	21	10	7.3
Other	1,159	11,007	10	6	8.1
Petroleum	866	2,662	7	1	3.9
Manufacturing	66	2,978	1	2	14.0
Other	228	5,366	2	3	11.5
International and unallocated	356	6,880	3	4	10.8
Petroleum	240	2,502	2	1	8.4
Manufacturing					
Other	116	4,378	1	2	13.3

SOURCE: Survey of Current Business, February 1981, pp. 40 and 41.

At year end 1950, the position in the petroleum industry was $3.4 billion; at year end 1979 it was $41.6 billion with an average annual growth rate of 9.0 percent. The growth rate was 12.6 percent in developed countries and 4.2 percent in developing countries. Among all areas, Europe had the highest rate of growth--13.9 percent. For all of 1950-1979, a great portion of the growth in position was financed by

U.S. Direct Investment Position Abroad, 1950-79

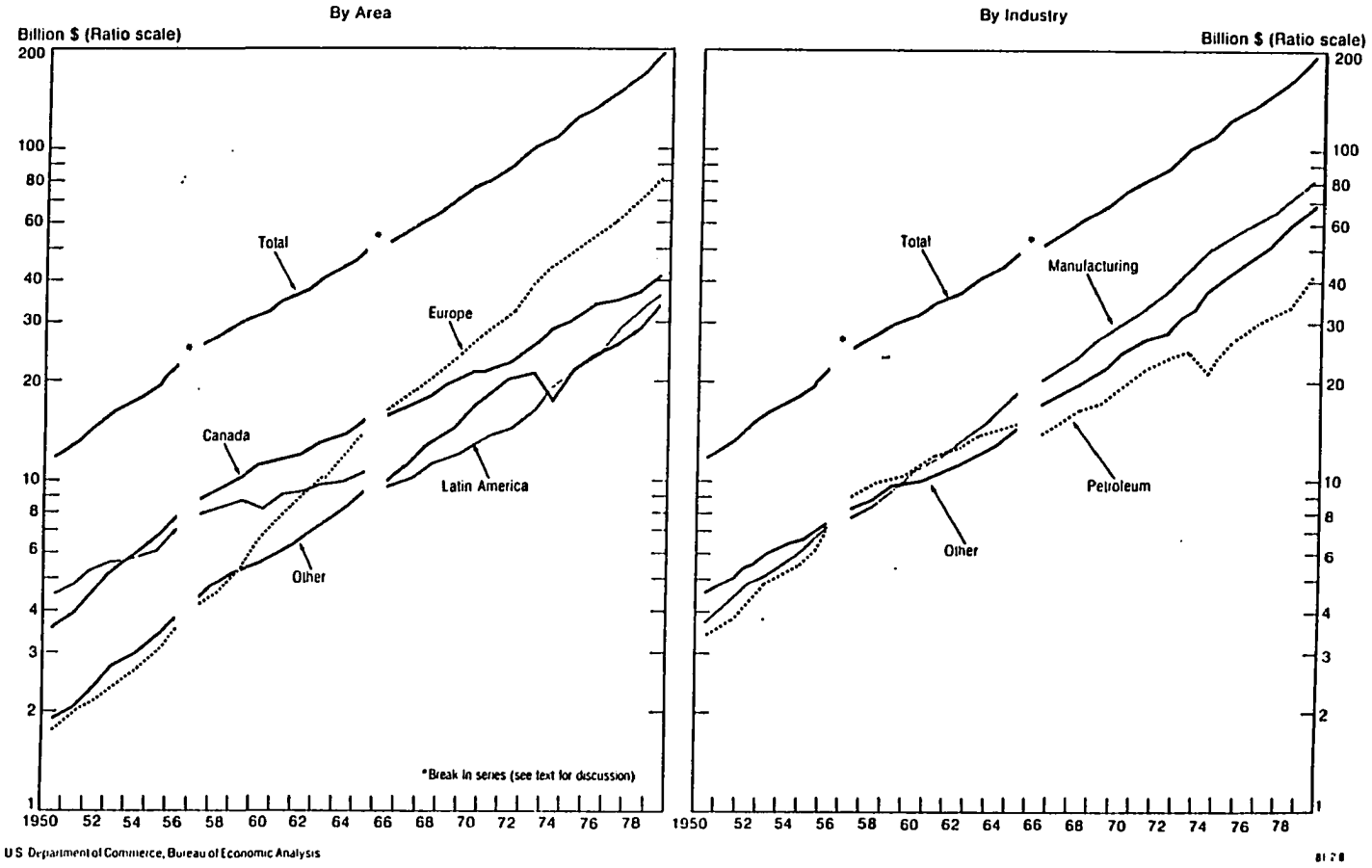


CHART 1-1

SOURCE: Survey of Current Business, February 1981, pp. 40 and 41.

equity and intercompany account outflows, with very low reinvested earnings (except during 1979).

According to Whichard (165, p. 45), the low rate of reinvested earnings was caused by intercompany pricing practices. Earnings were transferred from incorporated refining and marketing affiliates in oil-importing European countries to crude-oil producing affiliates in oil-exporting countries. The peak growth in the petroleum industry in Europe occurred in years 1950, 1957, 1960, 1961, 1973 and 1979, with a rate of 30, 27, 21, 22, 24 and 23 percent, respectively. The rapid growth during 1956 and 1957 may have been caused by the expectation of and actual formation of the European Economic Community. The rapid rise in the position during 1973 was due to a sharp increase in oil prices which resulted in the European affiliates' increased indebtedness to their U.S. parents. The sharp increase in the position during 1979 was due to a large increase in reinvested earnings, which, in turn, was caused by an increase in corporate earnings and the rate of reinvestment.

After World War II, U.S. economic aid to European countries paved the way for expanding U.S. direct investment in Europe. Both the U.S. and western Europe realized that they could not attain their objectives without economic and political cooperation. European economic and political unity provided a secure market for U.S. companies and their affiliates, as well as a countervailing power against Communist penetration in Europe. Creation of the European Coal and Steel Community (ECSC), (proposed in 1950 and set up in 1952), was Europe's first step towards this unity. In 1957, six European nations (Belgium, Germany, France, Italy, Luxembourg and Netherlands) signed a treaty which led to

the establishment of the European Economic Community (EEC). One of the greatest achievements of this community occurred in 1968 when the EEC Customs Union became fully operational. The six founding members (EEC(6)) had achieved free trade in industrial goods, had imposed a common external tariff on imports of manufactured goods from nonmember countries, and had begun to form a common foreign trade policy. In 1973, the United Kingdom, Denmark, and Ireland joined the community. Enlargement of the community from six members to nine members (EEC(9)) made the community more comparable to the U.S. Chart 1-2 compared the enlarged community with the U.S. on 1974 population, gross domestic product, exports, imports, area, percentage of world exports, and percentage of world imports. Figure 1-1 shows the balance of payments positions of the EEC and the U.S. during 1958-1974.

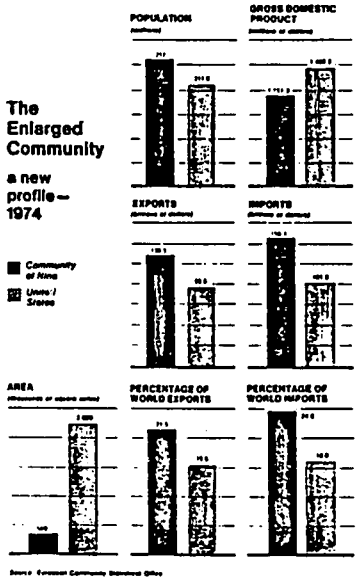
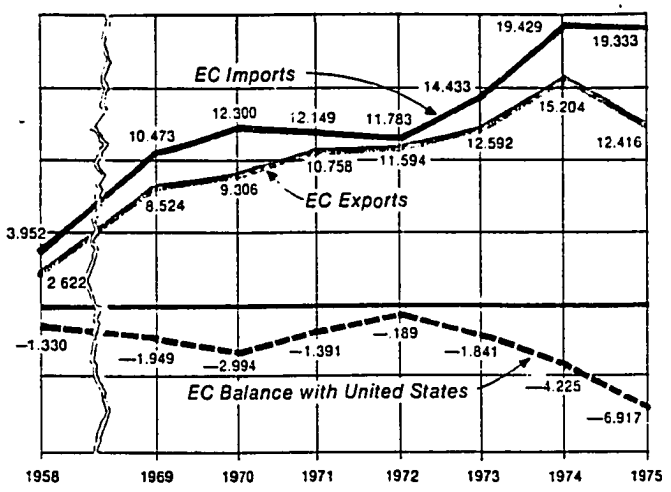


CHART 1-2

Reproduced from: European Community Information Service, The United States and the European Community: Their Common Interests in 1976, European Community Information Service, 2100 M Street, N.W., Washington, D.C. 20037, p. 12.

COMMUNITY OF NINE'S TRADE WITH THE UNITED STATES *(in billions of units of account)*[23]



Source: European Community Statistical Office

FIGURE 1-1

Reproduced from: European Community Information Service, The United States and the European Community: Their Common Interests in 1976, European Community Information Service, 2100 M Street, N.W., Washington, D.C. 20037, p. 25.

Methodology of the Study

The methodology used in determining the quantitative and non-quantitative factors that affect the flow of direct investment abroad and in investigating the role of multinational corporations in home and host nations cannot be limited to statistical techniques. An analysis of empirical data and of the history of MNCs, such as that presented in this study, is also necessary.

A careful examination of the history of the U.S. multinational corporations and an analysis of data on MNCs' activity provides: information on the nature, motivation and extent of the power and effectiveness of the U.S. MNCs; the extent of government involvement in persuading or discouraging private foreign direct investment; the effectiveness of

the home or host's government restrictions on the direction and amount of foreign direct investment; and the influence of national or international political or economic events on the nature, structure and direction of foreign direct investment.

In the empirical part of this study, a statistical model for determining the flow of direct foreign investment is developed. A polynomial distributed lag model and a simple linear regression technique are used for estimation purposes. In the determination of factors affecting the flow of foreign direct investment, a search procedure was conducted, and, among many variables with different lag structure, only those which had the best explanatory power were chosen. The term "best" is defined as the theoretically expected sign for coefficients, a high $\bar{R}^2$ (adjusted R^2), and t-statistics significantly different from zero.

In estimation of the equations for those equations which signify the presence of a positive first-order serial correlation, the Cochrane-Orcutt iterative process is applied to correct the autocorrelation.

The data for estimation purposes is limited to the 1950-1979 period on an annual basis. The limitation of data was a prime constraint on the estimation of equations.

Summary tables for estimations of all equations and definitions of all variables are provided at the end of the empirical chapter.

The Organization of the Study

Chapter II presents historical background on and the philosophy, motivation and nature of capital movement. The role of multinational oil companies in European countries is emphasized in particular. Chapter II is divided into three main parts. The first part includes: a brief

review of the history of capital movement and the position of the United Kingdom and the United States in international capital transactions; an identification and brief discussion of the major sources of capital movement; and definitions of different types of capital transactions and the nature of each type. Part two discusses the motives for direct foreign investment. Part three examines: the emergence of the U.S. multinational corporations after WWII; the history of multinational oil companies; and the impact of foreign direct investment on the economy of host nations.

Chapter III examines the performance and policies of multinational corporations in host nations and discusses host-nation response to multinational corporations. Chapter III is divided into two parts: The first part contains an analysis of the efficiency of multinational enterprises; a discussion of the MNCs' tendency toward monopoly; discussions of the problems of transfer pricing and diffusion of technology to less developed countries; and a comparative analysis of foreign direct investment in developed and developing countries. Part two examines the developed nations' response to MNCs; the growth of European dependence on oil as a major source of energy; European countries' restrictive policies against the multinational oil companies; experiences of multinational oil companies in a few developing countries, and the response of oil producing countries to MNCs.

Chapter IV presents an overview of previously developed theories on foreign direct investment and a mathematical model developed for this study. Chapter IV is divided into four main sections. Section one provides background on issues and problems concerning the effect of foreign

direct investment. In section two, the Micro-Economic Approach to the theory of foreign direct investment is introduced. This section's discussion proceeds under the headings of "Business Administration," "Industrial Organization," and "Product Cycle" approaches. Section three examines the Macro-Economic Approach to the problem of foreign investment. In this section, the Hecksher-Ohlin theorem, Mundell's substitutability theorem, the MacDougall-Kemp theorem, the author's alternative model, the Batra and Ramachandra's model, and Batra's model for less developed countries are discussed. Section four provides an overview of trade barriers and optimum tariff and taxation policies.

Chapter V provides a substantial model for determining the factors affecting the flow of direct foreign investment and provides empirical results based on yearly data for the period 1950-1979. Chapter V contains four sections. Section one presents a discussion of the development of the statistical model based on the neoclassical theory of profit maximization behavior and cost of adjustment. Section two discusses the problems, limitations and sources of the data. Section three offers the empirical results of the model for the period 1950-1979. This section contains a discussion of: the statistical estimation of equations related to U.S. foreign direct investment in the petroleum industry in the EEC(6); structural changes in the trend of U.S. foreign direct investment in the EEC(6); and a comparison of the statistical results of the petroleum industry with the manufacturing industry and with "all industries." Section four presents tables containing the statistical results and definitions of variables.

Chapter VI presents a survey of the findings and conclusions.

TABLE 1-2

U.S. DIRECT INVESTMENT POSITION ABROAD,

1950-1979

Line		1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
1	All areas	11,788	12,976	14,731	16,283	17,631	19,386	22,006	25,394	27,460	29,857	31,866	34,717
2	Petroleum	4,340	4,987	5,273	6,314	6,297	6,888	7,335	8,063	8,832	10,154	10,810	12,190
3	Manufacturing	3,811	4,348	4,967	5,345	5,898	6,911	7,985	9,099	9,973	9,727	11,081	11,997
4	Other	3,637	3,641	4,491	4,588	5,436	5,573	7,589	8,231	8,654	9,976	10,004	10,530
5	Developed countries	6,888	8,047	7,598	8,284	9,663	10,666	12,578	14,888	15,288	16,961	18,338	20,978
6	Petroleum	1,981	2,126	1,928	1,888	2,194	2,466	2,116	2,681	2,842	4,266	4,628	5,171
7	Manufacturing	2,884	3,343	3,777	4,112	4,565	5,158	6,888	7,681	7,778	8,158	8,525	10,284
8	Other	1,731	1,938	2,174	2,473	2,773	3,047	3,556	3,732	4,668	4,573	5,070	5,523
9	Canada	3,379	3,988	4,041	3,988	4,043	4,731	7,786	8,788	8,478	10,310	11,179	11,883
10	Petroleum	1,418	1,763	719	941	1,168	1,381	1,736	2,016	2,293	2,547	2,854	2,928
11	Manufacturing	1,267	2,018	2,898	2,945	2,773	3,063	4,858	4,956	4,964	5,166	5,673	5,978
12	Other	1,194	1,207	1,418	1,888	2,101	2,287	3,211	3,829	3,823	3,579	4,888	4,888
13	Europe	1,738	1,888	2,165	2,373	2,663	3,088	3,883	4,515	4,979	5,833	6,281	7,262
14	Petroleum	1,153	1,312	1,528	1,888	1,888	1,888	1,888	2,188	2,388	2,888	2,888	3,152
15	Manufacturing	1,852	1,974	1,188	1,318	1,478	1,888	1,888	2,188	2,388	2,888	2,888	3,155
16	Other	334	388	437	488	487	488	888	888	778	884	1,134	1,184
17	Other	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888
18	Petroleum	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888
19	Manufacturing	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888
20	Other	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888
21	Developing countries	4,888	4,888	4,888	4,888	4,888	4,888	4,888	4,888	4,888	4,888	4,888	4,888
22	Petroleum	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888
23	Manufacturing	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888
24	Other	2,888	2,888	2,888	2,888	2,888	2,888	2,888	2,888	2,888	2,888	2,888	2,888
25	Latin America	4,888	4,888	4,888	4,888	4,888	4,888	4,888	4,888	4,888	4,888	4,888	4,888
26	Petroleum	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888
27	Manufacturing	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888
28	Other	2,888	2,888	2,888	2,888	2,888	2,888	2,888	2,888	2,888	2,888	2,888	2,888
29	Other	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888
30	Petroleum	888	888	888	888	888	888	888	888	888	888	888	888
31	Manufacturing	888	888	888	888	888	888	888	888	888	888	888	888
32	Other	888	888	888	888	888	888	888	888	888	888	888	888
33	International and unallocated	888	888	888	888	888	888	888	888	888	888	888	888

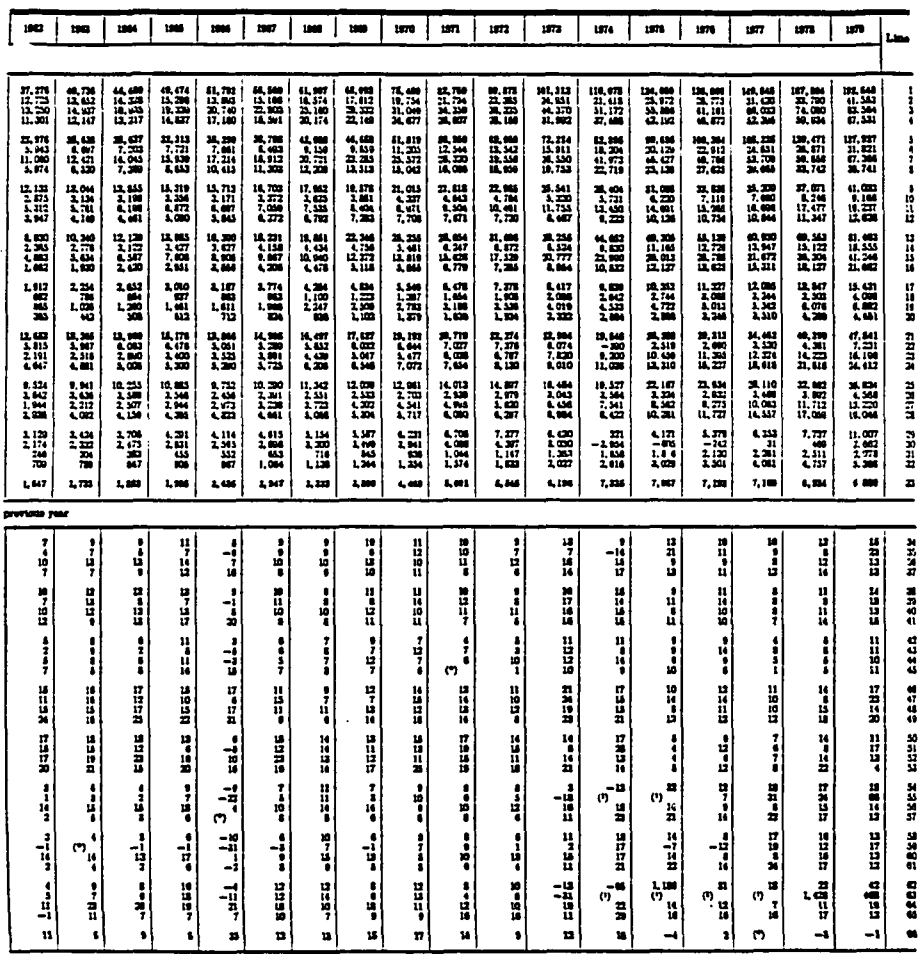
Percent change from

Line													
34	All areas		10	13	15	8	10	14	15	8	8	7	9
35	Petroleum		15	16	15	0	9	6	10	9	15	6	13
36	Manufacturing		14	14	8	16	17	15	14	8	2	14	8
37	Other		1	11	3	7	7	16	10	7	15	3	5
38	Developed countries		17	15	13	16	10	18	18	3	11	14	14
39	Petroleum		28	20	20	16	12	15	13	15	8	11	12
40	Manufacturing		16	14	10	11	15	15	15	5	5	15	8
41	Other		12	14	14	13	10	18	13	7	13	13	9
42	Canada		17	14	13	13	15	15	13	8	8	8	6
43	Petroleum		24	28	31	24	18	26	16	14	8	12	3
44	Manufacturing		6	15	15	4	11	14	12	6	15	6	5
45	Other		11	16	15	13	9	18	15	6	8	(1)	3
46	Europe		15	8	16	11	14	19	17	15	16	8	16
47	Petroleum		20	14	16	0	0	30	17	15	19	0	10
48	Manufacturing		15	11	16	15	14	12	15	15	19	0	10
49	Other		6	7	9	13	13	13	13	15	13	0	10
50	Other		13	13	9	15	13	16	8	8	10	9	9
51	Petroleum		24	10	14	0	0	0	-1	14	17	17	13
52	Manufacturing		20	14	19	15	13	16	14	14	15	17	13
53	Other		15	17	16	17	17	11	-1	8	13	-1	15
54	Developing countries		7	13	7	3	6	16	8	6	6	-2	16
55	Petroleum		(2)	16	15	1	5	15	8	7	1	-1	15
56	Manufacturing		28	16	-1	8	12	15	-15	6	7	-1	15
57	Other		7	9	6	3	6	18	8	6	6	-9	15
58	Latin America		8	11	3	3	3	17	8	5	5	-4	15
59	Petroleum		-1	7	-1	-2	3	15	-15	5	5	-7	15
60	Manufacturing		28	17	-1	8	11	15	-15	6	7	-15	15
61	Other		7	9	6	3	3	9	8	6	7	-15	6
62	Other		3	16	17	8	7	15	15	11	8	3	9
63	Petroleum		(2)	16	20	1	3	15	15	9	8	-1	9
64	Manufacturing		25	9	9	15	12	15	-1	16	17	15	14
65	Other		9	9	9	11	11	16	1	14	17	15	14
66	International and unallocated		9	13	13	16	17	22	20	15	14	8	8

*Less than 0.5 percent (±).
1. Percent change not defined because of negative position in current year, previous year, or both.

SOURCE: Survey of Current Business, February 1981, Vol. 61, No. 2, p. 50.

TABLE 1-2 (Continued)



SOURCE: Survey of Current Business, February 1981, Vol. 61, No. 2, p. 51.

CHAPTER II

MULTINATIONAL CORPORATIONS AND INTERNATIONAL CAPITAL MOVEMENTS

Introduction

As was mentioned above, in recent years, increasing attention has been focused on the importance and contribution of multinational corporations to their home countries as well as to the host nations. The emergence of international corporations is not a new phenomenon, but their importance as a "global power" with centralized planning on a world scale is relatively new. Giant corporations control the means of production, distribution, communication, etc., all over the world, or, as George Ball says, giant corporations "do have the power to affect the lives of people and nations in a manner that necessarily challenges the prerogatives and responsibilities of political authority" (Barnet and Muller; 10, p. 21). An expression of this power can be shown by comparing the annual sales of corporations and the gross national products of countries in 1973; in this regard GM was bigger than Switzerland, Pakistan, and South Africa; Royal Dutch Shell was bigger than Iran, Venezuela, and Turkey; Goodyear Tire was bigger than Saudi Arabia.[1]

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[1]Richard J. Barnet and Ronald E. Muller, Global Reach: The Power of the Multinational Corporations (New York: Simon and Schuster, 1974), p. 21.

The History and Nature of Capital Mobility

Historical Background

The structure of international capital movement changed substantially after WWI. Before WWI, the flow was from developed countries to developing countries or from colonial powers to their overseas territories. There has been some controversy among economists about the nature and amount of and motivation for the flow of capital at that time. For example, P. N. Rosenstein-Rodan (127) believes that almost two-thirds or three-fourths of this capital flow was in bond form and the rest in equity form, while Frank and Baird (49) state that much of the capital that flowed into colonial territories was in the form of private capital for construction of new railroads and new projects encouraged by the governments of developed countries.[1]

The United Kingdom can be considered a prime exporter of long-term capital in the nineteenth and early twentieth centuries. Table 2-1 demonstrates two important points: 1) by that time the world was almost entirely divided into creditor and debtor nations; 2) the United Kingdom was the leading creditor of the time. Almost 70 percent of the British foreign portfolio investment was devoted to building social overhead capital in order to facilitate and develop the capability of primary producing nations to export marketable surpluses to Europe.

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[1]The controversy about the actual international transactions and capital movement is in part due to lack of appropriate organization and institution to collect and record the data. C. K. Hobson's book The Export of Capital (63) is the first attempt to give a record of the export of capital from the United Kingdom for the period of 1870-1912. Another report by Imlah (76) diverges seriously from Hobson's estimates.

TABLE 2-1

MAIN CREDITOR AND DEBTOR COUNTRIES, 1913

	Gross Credits			Gross Debts	
	$ (000mn)	%		$ (000mn)	%
United Kingdom	13.0	40.9	Europe	12.0	27.3
France	9.0	20.4	Latin America	8.5	19.3
Germany	5.8	13.2	United States	6.8	15.5
Belgium, Netherlands, and Switzerland	5.5	12.5	Canada	3.7	8.4
			Asia	6.0	13.6
United States	3.5	8.0			
			Africa	4.7	10.7
Other Countries	2.2	5.0			
			Oceania	2.3	5.2
	44.0	100.0		44.0	100.0

SOURCE: United Nations, International Capital Movement in the Inter-War Period, Lake Success, 1949.

The Great Depression changed the position of the United Kingdom in the international market. First, in relative terms, the scale of capital exports was reduced dramatically; second, the geographical pattern of lending was limited to the sterling area; and, finally, the composition of lending was changed from portfolio investment of official capital flow (including grants and loans) and private investment. In short, Britain lost her leadership in the world of capital flow and has been playing the role of middleman ever since.

Identification and Major Sources of Capital Movement

Changes in the structure and composition of and motivation for capital were not limited to the United Kingdom. In fact, four different sources of capital movement can be distinguished after WWII: multilateral, bilateral, private, and from OPEC countries.

It can be argued that after WWII developed countries found themselves more concerned about that two-thirds of the world's population living in misery and threatened by hunger, malnutrition, and disease. In light of this, developed nations began to form multilateral institutions[1] which became a channel for the transfer of capital.

The second source of capital movement is bilateral, or government to government. After WWII, the U.S. was committed to the reconstruction of European countries. The initial commitment was 2 percent of the U.S. GNP. In 1949, with the announcement of the "Four-Point Program," economic aid became a U.S. national policy. During the late 1950s U.S. aid to Europe and less developed countries was closely tied to issues of national security and the promotion of U.S. private investors in foreign countries.

The European recovery program of post WWII and the later support for private investors in less developed countries paved the way for expanding U.S. multinational corporations around the world. Multinational corporations now constitute a substantial part of the U.S. private capital movement.

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[1]The Conference of Bretton Wood resulted in the formation of the IBRD or World Bank as a companion organization for IMF, and in 1960 the International Development Association was developed and so forth.

Finally, formation of the Organization of Petroleum Exporting Countries (OPEC) opened a promising source of capital movement to both developing and developed countries.

Types of Capital Transactions

According to Pazos, capital is transferred from a saver country to an investor country to finance:

> . . . (a) the purchase or construction of production facilities that is owned and operated by the savers themselves; (b) the purchase of shares in the property of production facilities that is operated by persons other than the savers; (c) the acquisition of money claims against persons that are engaged in construction or operation of production facilities; and (d) the acquisition of money claims against financial intermediaries that eventually purchase property shares or money claims from persons engaged in the construction or operation of production facilities.[1]

Capital transactions under (a) above are called direct foreign investment specified as "an act of entrepreneurship"[2] and are applied to construction and enlargement of a plant, operation of a mine, or cultivation of a new field. Capital movement under (b), (c), and (d) above is called "Indirect Foreign Investment," or portfolio investment, which is purely a financial phenomenon.[3] Tsurumi (155, p. 73) describes the motivation for foreign direct investment as the control and management

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[1] Felipe Pazos, "The Role of International Movements of Private Capital in Promoting Development," in John H. Adler and Paul W. Kuznets, Capital Movement and Economic Development, (New York: St. Martin's Press, 1967), p. 186.

[2] Ibid.

[3] Pazos differentiates between "portfolio investment" as claims negotiated through transferable documents and "contractual investment" where claims made through bilateral negotiation and without transferable documents.

of a business operation and the motivation for portfolio investment as purely a financial gain.[1]

Data in Table 2-2 indicate that U.S. portfolio investment in underdeveloped countries increased until 1929. The total U.S. portfolio investment in Latin America, Africa, Asia, and Oceania rose from U.S. $473 million in 1908 to U.S. $2,828 million in 1929. The Great Depression caused a suspension of U.S. portfolio investment in underdeveloped countries; book value of this investment in 1950 had dropped to U.S. $960 million, which means that there was no new flow of portfolio investment from the U.S. to less developed countries during the 1930s and 1940s. Data in Table 2-2 also shows the amount and distribution of U.S. direct investment between 1908 and 1959.

The Motive for Direct Foreign Investment

Several explanations have been advanced concerning the motivation for direct foreign investment. Among them are market imperfection, risk diversification, as well as a number of other miscellaneous factors.

The Market Imperfection

Theoretically a single factor such as the difference in cost of capital, cheap raw materials or the presence of a technological gap between the two countries may explain direct investment by a firm in a

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[1]With regard to difference between "Foreign Direct Investment" and "Foreign Portfolio Investment" (Tsurumi (155, p. 73) says "An investment in a foreign country with the intention of actively managing the physical assets and organization acquired or created as a result of the investment, the investment is commonly termed a foreign direct investment. If by contrast, the foreign investment is such that the investor intends only to hold the investment with the expectation of financial gain and does not intend to manage the investment it is termed a foreign portfolio investment or simple portfolio investment."

TABLE 2-2

U.S. Direct and Portfolio Investment by Geographic Areas, 1908–1959

(Millions of U.S. dollars)

	1908	1914	1919	1924	1929	1935 *	1950	1959
Direct								
Europe	369	573	693	921	1,353	1,259	1,720	5,300
Canada and Newfoundland	405	618	814	1,080	2,010	1,952	3,579	10,171
Latin America	754	1,281	1,988	2,819	3,518	2,847	4,866	8,218
Africa	5	13	31	58	102	93	352	843
Asia	75	119	175	267	394	403	1,044	2,236
Oceania	10	17	53	117	149	91	226	876
Total direct	1,618	2,622	3,754	5,264	7,528	6,690	11,787	29,735
Long-Term Loans and Portfolio								
Europe	120	119	1,294	1,732	3,247	1,767	1,650	2,336
Canada and Newfoundland	292	249	729	1,552	1,650	1,706	3,618	5,435
Latin America	314	368	418	853	1,911	1,704	517	1,151
Africa	0	0	0	0	17	33	—	—
Asia	160	127	134	405	646	512	443 †	1,265 †
Oceania	0	0	1	24	254	322	—	—
Total portfolio	887	862	2,576	4,565	7,725	5,999	6,228	10,710

* Data for 1935 loans and portfolio investment was obtained by deducting 1936 direct investment (Office of Business Economics estimates) from 1935 total investment (Lewis). The discrepancy between direct investment items for 1935 and 1936 is approximately $45 million.

† This item represents a total of Africa, Asia and Oceania.

Sources: Cleona Lewis, *America's Stake in International Investments*, Brookings, 1938; U.S. Department of Commerce, Office of Business Economics, *Balance of Payments Statistical Supplement*.

Reproduced from: John H. Adler and Paul W. Kuznets, Capital Movement and Economic Development, New York: St. Martin's Press, 1967, p. 190.

foreign nation--but in the real world many forces cause the market to deviate from perfect competition. Therefore if the cost of capital is different in the two countries, capital can be transferred to the country with the higher cost of capital, but not necessarily in the form of foreign direct investment. With regard to a cheap raw material, an investor can buy the raw material from a firm in the host country and still produce at home. Finally, if there is a demand for special technology in the host country, the technology can be sold or be rented through licensing and does not necessarily require foreign direct investment. Therefore, a combination of economic and political factors could cause transfer of capital in the form of direct investment in an imperfect market.

Hymer (73) believes that the oligopolistic market structure of certain industries is the basic motivation for foreign direct investment. Industries which fall somewhere between monopoly and perfect competition characterized by imperfect competition with numerous small firms tend to engage in foreign operations. Empirical evidence for U.S. multinational firms in Canada confirm that industries with many small firms dominate the market share in Canadian investment.[1]

The basic motivation of foreign direct investment may be classified under defensive motivation and aggressive motivation or a combination of both.

Defensive motivation may be caused when a firm perceives the fear of losing the present or future market in a foreign land because

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[1]More detail about the theoretical and empirical evidence on Hymer's view can be found in Stephen Hymer, The Multinational Corporation: A Radical Approach (Cambridge: Cambridge University Press, 1979).

of a high tariff, government restrictions, and expansion of industry by a rival firm in the host nation which blocks export to that country.

Aggressive motivation may result from the natural growth of a firm, for example, a manufacturing firm that exports its products through local distributors. It may proceed to establish a new sales subsidiary or purchase the local distributors and then, as the market expands, firm may invest in a manufacturing plant.

The presence of a cheap source of raw materials and a market for the final product may also motivate a firm to save transportation cost and invest in the host country.

Kindleberger (87) argues that market imperfection is a requirement for direct investment abroad and that foreign direct investments are mostly of a defensive nature.

Knickerbocker (90) describes foreign direct investment as the defensive strategy of oligopolistic rivals.

A monopolistic firm may enjoy one or more of the following advantages as the result of investing abroad: 1) product market imperfections such as the existence of product differentiation, marketing and organizational skill, and collusion or administered prices; 2) factor market imperfection such as the presence of wage differential, differential in the cost of capital, unique techniques in production, and access to cheap sources of raw material; 3) internal and external economies of scale generated through horizontal or vertical integration; and 4) other externalities caused by government interference such as regulation in favor of multinational enterprise or tax exemptions and other concessions.

The Risk Diversification

International diversification of scales reduces the risk and creates a more stable stream of profits over time. The advantage of diversification can be obtained if the economic fluctuations of host countries are not perfectly correlated with the economic fluctuation of the investors' country. Rugman (134) empirically shows that the expansion of foreign operation reduces the risk of the firm's profit. The basic reason for the risk reduction is that each country has its own unique parameters which affect direct investment, such as the presence of certain regulations or a strike which may not be present in other country. Therefore international diversification provides an opportunity for investors to manage and control uncertain events with more confidence and less risk. In this regard, a director of an important American petroleum company said that "we work on an insurance policy of spreading risks around . . . we're not smart enough to predict the future . . . we can't figure out which area will go bad. Thus we diversify and take a part in every area" (Wilkins; 168, p. 206).

Other Factors Influencing Investment Decisions

A firm's objectives and motivation may change in time. A multinational corporation's objectives during the early stages of development may be based on the expansion of the firm at home or abroad, which is an "aggressive" act, while, after a certain degree of growth, the decision maker's motivation may change in order to maintain control over the existing operation. According to Wilkins (168) the basic motivation of multinational enterprises in the late 1950s and 1960s might have been to maintain the existing stake all over the world. Specifically, the

survival of U.S. multinational affiliates relied essentially on three factors: 1) the availability of an adequate supply of raw material and primary products; 2) the existence of a reliable market to sell their final products, and 3) a global organizational structure to coordinate and harmonize all processes of production, marketing, and distribution.

The U.S. multinational corporations were successful in obtaining and controlling adequate sources of raw materials, energy, and mining. U.S. corporations intensified their search for basic sources of supply during and after WWI and WWII because of the high demand for these sources during the Wars. Also, the government increased its support for industries involved in exploration and production of basic raw materials.[1]

With regard to the new market, U.S. enterprises followed a market-oriented strategy to expand their market in LDCs. Investments were mostly in "light industries," such as assembly plants, distribution, and marketing, with short term duration and presumably less risk.

In summary, post-war motivation for foreign direct investment seems to be market oriented, aimed at maintaining control over the vast activities of the global corporation. Although a great portion of U.S. multinational corporations' foreign direct investment was devoted to heavy and sophisticated industries in developed nations, Tables 2-3 and 2-4 indicate that by the 1960s investment had spread to less developed areas at least in light industries.

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[1]A more detailed discussion is given in "Historical Analysis of Multinational Oil Companies."

TABLE 2-3

U.S. DIRECT FOREIGN INVESTMENTS, 1950, 1960, AND 1970

(Book Value in Billion U.S. Dollars)

Country or region	(1) Total [1]			(2) Manufacturing			(3) Petroleum			(4) Trade			(5) Mining [2]			(6) Public utilities [3]		
	1950	1960	1970	1950	1960	1970	1950	1960	1970	1950	1960 [4]	1970	1950	1960	1970	1950	1960 [4]	1970
Europe	1.73	6.69	24.52	.93	3.80	13.71	.43	1.76	5.47	.19	.74	2.79	.03	.05	.08	.03	.04	.11
Canada	3.58	11.18	22.79	1.90	4.83	10.06	.42	2.66	4.81	.24	.63	1.32	.33	1.32	2.99	.28	.64	.68
Latin America [5]	4.59	8.32	14.76	.78	1.52	4.62	1.31	3.12	3.94	.24	.78	1.54	.67	1.27	2.07	.94	1.18	.61
Asia	1.00	2.48	5.56	.06	.29 [4]	1.52	.78	1.66 [4]	3.02	.05	.14	.46	.02	.02 [4]	.09	.05 [6]	.10	.14
Africa	.29	1.07	3.48	.06	.12 [4]	.54	.12	.41 [4]	2.09	.02	.05	.21	.06	.25 [4]	.45	[7]	.01	.01
Oceania	.26	1.01	3.49	.01	.49 [4]	1.81	.11	.37 [4]	.74	.02	.06	.23	.01	.03 [4]	.49	[8]	[8]	.01
TOTAL [9]	11.79	31.82	78.18	3.83	11.05	32.26	3.39	10.81	21.71	.76	2.40	6.55	1.13	2.95	6.17	1.42	2.55	2.87

Source: See source for Table XIII.1.
[1] Total is the sum of columns 2-6 plus miscellaneous investments.
[2] Including smelting.
[3] Includes transportation.
[4] Preliminary figures (this author cannot locate revised figures)
[5] Includes European and former European dependencies.
[6] Practically all in the Philippines.
[7] Less than $5 million.
[8] $1 million or less.
[9] Includes unallocated international.

Reproduced from: Mira Wilkins, The Maturity of Multinational Enterprise: American Business Abroad from 1914-1970, Cambridge, Massachusetts: Harvard University Press, 1974, p. 330.

TABLE 2-4

U.S. DIRECT INVESTMENT IN MANUFACTURING,

1950, 1955-1970

(Book Value in Million Dollars)

Year	Europe			Canada	Latin America [1]	Asia	Africa [2]	Oceania [3]	Total [4]
	Total	U.K.	EEC [5]						
1950	932	542	317	1,897	781	60	55	107	3,831
1955	1,640	946	563	2,841	1,372	94 [6]	86 [7]	258	6,349
1956	1,816	1,052	659	3,196	1,543	113 [8]	94 [7]	285	7,152
1957	2,195	1,238	831	3,924	1,280 [6]	190	106	314	8,009
1958	2,475	1,361	970	4,164	1,334	217	117	365	8,673
1959	2,927	1,607	1,135	4,558	1,425	248	120	412	9,692
1960	3,804	2,164 [9]	1,436 [9]	4,827	1,521	286 [9]	118 [9]	494 [9]	11,051
1961	4,255	2,305 [9]	1,659 [9]	5,076	1,707	321 [9]	113 [9]	423 [9]	11,997
1962	4,883	2,512 [9]	2,063 [9]	5,312	1,944	348 [9]	141 [9]	618 [9]	13,250
1963	5,634	2,739	2,528	5,761	2,213	430	177	723	14,937
1964	6,587	3,010	3,139	6,197	2,507	556	227	860	16,935
1965	7,606	3,306	3,725	6,872	2,945	676	292	948	19,339
1966	8,876	3,716	4,401	7,675	3,317	796	333	1,061	22,058
1967	9,798	3,878	4,976	8,095	3,586	988	370	1,336	24,172
1968	10,796	4,243	5,399	8,568	4,005	1,144	403	1,497	26,414
1969	12,280	4,567	6,382	9,406	4,347	1,378	453	1,661	29,527
1970	13,706	4,977	7,177	10,059	4,621	1,524	538	1,814	32,261

Source: See source for Table XIII.1.

[1] Includes European and former European dependencies (except 1955–1956).

[2] The largest part of this is in South Africa.

[3] The greatest part of this is in Australia.

[4] Includes some unallocated international investments.

[5] Germany, France, Italy, Belgium, Netherlands, Luxembourg—countries that joined in the European Economic Community in 1957. Data before 1957 excludes Luxembourg, but investment there in manufacturing was small (exclusion is because figures are not available.)

[6] Includes only India, Indonesia, Japan, and the Philippines.

[7] South Africa only.

[8] Drop may be because of change in series.

[9] Preliminary figures (this author cannot locate published revised figures).

Reproduced from: Mira Wilkins, The Maturity of Multinational Enterprise: American Business Abroad from 1914-1970, Cambridge: Massachusetts: Harvard University Press, 1974, p. 331.

Historical Analysis of Multinational Corporations and Their Dominant Role on the Economy of the Host Nations

The Emergence of the U.S. Multinational Corporations (Pre-World War II)

The status of American multinational corporations before World War II is briefly reviewed in this section. The reasons for lack of emphasis on the pre-WWII situation of U.S. corporations are: 1) the empirical part of this study is based on data after WWII and 2) limitations of this study do not allow a more comprehensive elaboration on the early development of multinational corporations.

Before WWI, the U.S.' stake in foreign countries was small relative to European countries (Britain, France, and Germany). Table 2-5 shows the distribution of U.S. and European foreign investment in 1914. Of the $3.5 billion U.S. investment abroad, only $2.65 billion is estimated as direct foreign investment. Also, Table 2-1 indicates that U.S. was a debtor in international account.

In the early stages of the development of multinational corporations, the availability of transportation and communication facilities were a major determinant in foreign activities of U.S. enterprises. U.S. investments were mostly concentrated in the neighboring countries Canada and Mexico.

The state of the economic development of host countries was another factor affecting the nature of investment. For example, in Mexico, investments were made mostly in mining and railroads, while in Europe, U.S. direct investments were focused in selling, assembling, processing, and manufacturing. The higher per-capita income of the

TABLE 2-5

U.S. AND EUROPEAN FOREIGN INVESTMENTS IN 1914

(Book Value in Billions of Dollars)

Country	Total
United States	$ 3.5[a]
Great Britain	18.3
France	8.7
Germany	5.6
Belgium, Netherlands and Switzerland	5.5

SOURCE: W. S. Woytinsky and E. S. Woytinsky, World Commerce and Governments, New York: The Twentieth Century Fund, 1955, p. 191.

[a]Figures on direct and portfolio investments available only for the United States: $2.6 billion direct investment and $.9 billion portfolio investment.

Reproduced from: Anant R. Negandhi and S. B. Prasad, The Frightening Angels: A Study of U.S. Multinationals in Developing Nations, The Kent State University Press, 1975, p. 201.

European countries intensified the expansion of market-oriented operations rather than resource-oriented activities. Investments in less developed Asian countries totaled $40 million, which was minor compared to the $573 million investment in European countries.

In 1914, the ranking of major sectors of U.S. direct investment was: 1) mining concentrated in Mexico and Latin America; 2) manufacturing concentrated in Canada and Europe; 3) agriculture in the Carribean and Canada; and 4) petroleum concentrated for the most part in Europe.

The activities of U.S. multinational corporations in the 1920s were different from those of the pre-WWI period, multinational enterprises were: 1) involved in more countries; 2) establishing more subsidiaries; 3) transferring more technology to the host nations through the establishment of manufacturing plants; and 4) operating in more diversified activities.

Production of U.S. affiliates was not limited to host-country consumption. This was generally true for market-oriented subsidiaries as well as resource-oriented subsidiaries. For example, the market-oriented subsidiaries of DuPont Company were producing in France and exporting some products to Algeria, Tunisia, and Morocco. Products of supply oriented investments in Central America, such as bananas, mineral products, and petroleum, were exported to European countries and the United States.

During the 1920s, joint ventures of U.S. companies and companies of other nations or agencies of foreign governments became a common strategy for further world-wide expansion. U.S. corporation joint ventures with companies in less developed countries were very rare due to the lack of capital and inadequate technology on the part of the LDC's corporation. The joint ventures of U.S. corporations were basically for sharing the cost, risk, and required technology to undertake national or international projects.

Mira Wilkins (168) suggests five motives for joint ventures: 1) to adjust to the market conditions, environment, and products most appropriate for the host nations; 2) to acquire more capital; 3) to share technology, marketing skill, and the risk involved in foreign

operations; 4) to cope with rivals and competitors; and 5) to obtain a new market or explore natural resources and share the cost.

Two important events, the 1911 anti-trust law and the destruction caused by WWI, reduced or even stopped the world-wide activities of some industries. A major reduction and disaggregation in the tobacco industry, the "drop-out" of Washington Electric and Western Electric, and the reduction in the activities of the U.S. steel industry are a few examples of the effect of these events.

During the 1920s American corporations had their failures along with their successes in dealing with investment abroad. In Europe, they endured expropriation of their properties (Russia), nationalization of oil companies (Spain), and increased regulation by a number of other European nations. In Canada, by contrast, they were only verbally criticized by the trade commission (note that the U.S. had most at stake in Canada). American business challenged European investors not only in European countries, but also in Canada, Latin America, and Middle East, which were once dominated by the European investors.

In 1922, for the first time in history, U.S. foreign investment in Canada surpassed the British investment there.[1] In 1929, the U.S. share of total foreign investment in Latin America exceeded that of the British.[2] Despite the fear of U.S. domination in the world market, the reaction of European competitors was not hostile toward U.S. corporation;

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[1]Frank A. Knox, "Excursus, Canadian Capital Movements and the Canadian Balance of International Payments, 1900-1934," in Herbert Marshall, Frank A. Southard, Jr., and Kenneth W. Taylor, Canadian-American Industry, New Haven, 1936, p. 299.

[2]J. Fred Rippy, British Investment in Latin America, Minneapolis, Minn., 1959.

in most cases, they were cooperative in business expansion both in European countries and in other nations.

From 1929 throughout the 1930s there was a period of discouragement and failure for U.S. businesses investing abroad. The weakening economic conditions at home forced the U.S. Congress to impose high tariffs on imports in order to protect the domestic industries. In reaction to the U.S. imposition of trade barriers, Canada and European countries retaliated by applying different forms of trade restrictions to save their own industries. The economic conditions of the U.S. continued to deteriorate. The situation in foreign nations was even worse, but, very high tariffs in European countries, especially in Britain, made U.S. export impossible, and U.S. corporations were compelled to invest in those returns in order to maintain their market. The situation in Germany was different; in the early 1930s, U.S. business in Germany was under attack, but by the mid-1930s, the growing market in Germany plus the treaty of friendship between the U.S. and Germany reassured the U.S. companies.

According to Wilkins (168, p. 187) most U.S. companies were making unusually high profits, but they were not allowed to take profits out of the country. It is believed that foreign investment in Germany was used for WWII war preparation.

During 1933 and 1934, the Roosevelt administration devaluated the dollar to improve the economic crisis at home, which also benefited U.S. enterprises in foreign countries. This benefit did not last long because of the considerable reduction in the value of other currencies which had its negative impact on the earnings of U.S. investors abroad.

The State Department's support of private enterprises in foreign countries at that time was cool and sometimes discouraging, according to some reports.[1]

In sum, during the 1930s U.S. enterprises in foreign countries faced many political and economic problems: devaluation of foreign currencies; depression of the international economy; forced investment in host nations, and an economic crisis at home. This left U.S. multinational corporations discouraged and uncertain about the future market.

The Post-World-War-II U.S. Multinational Corporations Perspective

World War II was a turning point in the history of U.S. global corporations. The Bretton Woods Conference of July 1-12, 1944, resulted in the formation of the International Monetary Fund (IMF) and the International Bank for Reconstruction and Development (IBRD) which was followed by the establishment of the United Nations in 1945. These were all indications of a greater role of the U.S. in world affairs. The post war economic recovery and reconstruction program for Japan and Europe by the U.S. was a reaction to the Soviet expansion and also it was aimed to fulfill the U.S. future economic objectives. Soviet victory in Eastern Europe and new waves of communist expansion around the world persuaded the U.S. to get far more involved in the political and economic affairs of the noncommunist block than it had in the past.

During the war, U.S. multinational corporations that were involved in the production of raw material got more attention than

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[1]National Foreign Convention, Official Report 1940, p. 280.

manufacturing enterprises. Consequently, after 1945 Americans were more interested in investing in raw materials than in manufacturing.

The U.S. was committed to aid European countries that were most damaged by the war. Economic aid alone was not sufficient to contain Soviet expansion and to attain other economic and political objectives. Therefore, the U.S. started supplying military as well as economic assistance to Greece and Turkey in 1947. In 1948, the European recovery program, the Marshall Plan, was started which was the beginning of increased U.S. influence in European countries. Only one year after the Marshall Plan, during 1949, U.S., Canada, and the ten Western European countries formed the North Atlantic Treaty Organization (NATO), and during the same year, the U.S. Congress passed a Mutual Defense Assistance Act to provide military aid to members of NATO. Within five years after the war, U.S. foreign aid to friendly countries had increased to $24 billion.

In 1949, the "Point Four" program was proposed by President Truman, allowing transfer of technology and economic aid to less developed countries.

The United States along with other members of the United Nations, tried to facilitate international trade. One attempt was the formation of the International Trade Organization in 1948, which aimed to promote lower trade barriers, help less developed countries, and control cartels. In 1948, the U.S. also accepted the General Agreement on Tariffs and Trade (GATT).

After WWII, the U.S. government strongly supported private investors in foreign countries who respected national security and who

dealt with friendly countries (in government terminology, the "democratic societies"). Since U.S. investors, especially in the manufacturing sector, were hesitant to reinvest in European countries, U.S. Congress through the Economic Cooperation Act of 1948, for the first time guaranteed foreign investment in western European countries. Also, the tax policy on foreign earning was revised in order to prevent double taxation.

Other U.S. institutions and international organizations backed by the U.S.--such as the Economic Cooperation Administration (formed in 1948), the Export-Import Bank (1934), and the World Bank--provided financial support for U.S. private investors abroad.

During the immediate post-war years, the U.S. government promoted private investment in Europe, and during the early 1950s this policy was extended to less developed friendly countries with a limited restriction on the transfer of U.S. technology and know-how to those countries. In contrast, after WWI, U.S. policy was supportive of only those investments which served the following purposes: 1) to increase U.S. export, 2) to expand control over raw materials; 3) to stand against foreign monopolies; and 4) to improve the strategic position of the U.S. in foreign countries.

Another significant factor during the post-WWII period which necessitated expansion of foreign direct investment was the U.S. surplus position on the balance of payments, and the remedies recommended to reach equilibrium on the balance of payment. Some of the recommended policies were: 1) increasing private foreign direct investment; 2)

providing economic aid to friendly countries; and 3) decreasing exports while increasing imports.

The 1950 Korean War intensified the need for greater involvement by U.S. enterprises in the extraction of raw materials around the world.

The political situation of that time required changes in U.S. foreign policy. First, under the Defense Production Act, the Petroleum Administration for Defense (P.A.D.) was formed which established exemptions from antitrust laws for U.S. oil companies. Second, private investors in mining and petroleum were given first priority in receiving assistance from the U.S. government. Third, the Mutual Assistance Control Act was passed in 1951, under which all shipments of commodities or services to non-friendly (communist bloc) countries were enbargoed. Finally, U.S. foreign aid was exclusively devoted to defense and security objectives. Table 2-6 indicates the affect of U.S. post-war policy on the distribution of direct investment in manufacturing, petroleum and mining.

During the mid-1950s the attention of the U.S. government turned from developed to underdeveloped countries. The U.S. government guaranty program for new investment (initiated for development in Europe) was exclusively used for less developed countries.

In 1961, the Agency for International Development (A.I.D.) was established to encourage private investment in less developed nations (however, U.S. aid was still tied to ensuring national security and the well-being of investors in foreign countries).

TABLE 2-6

U.S. DIRECT FOREIGN INVESTMENTS, 1946, 1950, AND 1954, BY SECTORS

(Book Value in Billion U.S. Dollars and Percentage Increase)

	1946	1950	1954	Increase 1946-1950	Increase 1950-1954
Petroleum	1.4	3.4	5.3	143%	56%
Manufacturing	2.4	3.8	5.7	58%	50%
Mining	.8	1.1	2.1	38%	91%
Utilities	1.3	1.4	1.5	8%	7%

SOURCE: Adapted from the revised figures given in U.S. Department of Commerce Office of Business Economics, U.S. Business Investments in Foreign Countries, Washington, D.C.,.1960, p. 1, and Survey of Current Business, August 1956, p. 19.

During the 1950s and early 1960s the U.S. balance of payments turned from surplus to continuous deficit, and the U.S. was forced to change its policy in order to reach equilibrium on the balance of payments.

The 1965 "Voluntary balance of payments" program announced by Lyndon B. Johnson seemed to be ineffective; therefore, on January 1, 1968, President Johnson imposed for the first time a "Mandatory Control Program"[1] on the outflow of direct foreign investment. Other measures which in part served balance-of-payments objectives were reduction in control over the export of some commodities to Eastern Europe in 1970 and lifting the ban on nonstrategic materials to Communist China in 1969.

[1]The effectiveness of these programs is tested in the empirical part.

Imposition of a tariff on the import of commodities presumably encourages the production of substitute goods and provides a suitable environment for foreign direct investment in areas where import is suspended. The formation of the European Economic Community[1] (elimination of trade barriers within the members of the community and imposition of a tariff wall against nonmember countries) created expectation for a greater flow of foreign direct investment and a reduction in the export of commodities to the community.[2]

During 1959, only one year after the Common Market had come into being, seven European countries set up the European Free Trade Area.[3]

During the late 1950s and early 1960s, there was talk about having Britain join the EEC. Such expectation generated new stimulus for more direct investment by U.S. investors in the United Kingdom, but when, in 1963, Britain failed to join EEC, according to Wilkins (168), many investors shifted their new investment from United Kingdom to the Common Market.

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[1]Six European countries (Belgium, Luxembourg, the Netherlands, West Germany, Italy and France) signed the Room Treaty, on March 25, 1957, forming the European Economic Community (EEC) - the Common Market. By July, 1958, free trade on goods, services and men had been reached.

[2]The effectiveness of the formation of EEC on the flow of U.S. foreign direct investment in EEC is tested in the empirical part.

[3]Countries included are Great Britain, Sweden, Norway, Denmark, Switzerland, Austria, and Portugal.

The Historical Perspective of Multinational Oil Companies

The history of multinational oil companies can be divided into three periods: 1) before 1914, 2) 1914-1945, 3) 1945 and after.

The period before 1914

A decade after the first oil well was drilled in 1859 in Pennsylvania, Standard Oil started refining and distributing oil in the U.S. and in foreign countries and took leadership of the oil industry.

Only 20 years after the first oil drilling, in 1879, Standard Oil of Ohio made its first direct investment abroad by establishing a refinery in Galicia. Prior to 1879, the export of refined oil from the U.S. at times equaled up to 77 percent of American output.

Although there was collaboration among the Standard Oil companies all along, it was formalized in 1882 with the formation of the Standard Oil Trust, which included 40 member companies. During the mid-1880s, duties on export of refined oil forced Standard Oil affiliates to import crude oil from the U.S. and refine it in Mexico and Vera Cruz.

Expansion of export of cheap Russian oil into Europe brought a new surge of competition for U.S. oil exporters, resulting in the so-called "oil war." The U.S. oil companies needed to take counteraction to stop Russian expansion in the European market or at least to retain their own position. The first tactic applied by Standard Oil was a reduction in oil prices, but soon they realized its ineffectiveness. The second policy was to merge with foreign companies in order to watch the market; the establishment of the Anglo-American oil company in 1888 and

and the joint ventures with German oil merchants in 1890 are two examples of consolidation with foreign companies. The U.S. oil companies were given the chance to explore for oil in Russia, but despite many attempts this never happened.

Oil export was one of the most important items in the U.S. export business equaling almost half of the U.S. oil production during the period of 1882 to 1914 (Table 2-7). Standard Oil had the greatest share in the U.S. oil industry and in 1900 was considered to be a giant multinational corporation. When foreign tariffs for refined oil were high, the U.S. oil companies established refineries abroad; by the turn of the century they had started to buy foreign companies, and, in some cases, had even started buying oil from markets where prices were cheaper than the U.S. oil market.

The oil companies acted more oligopolistically during 1880 to 1910 than during any other period, due to the international agreements between U.S. oil companies and their foreign rivals. The formation of the Standard Oil Trust in 1882, the merger of U.S. oil companies with British and German companies in the "oil war" period, and the 1907 agreement between Standard Oil affiliates, the Deutsche Bank-Shell group, and Nobel-Rothschild provide evidence showing how a few multinational oil companies controlled the oil industry nationally and internationally.

By 1907 Standard Oil had acquired 55 foreign enterprises with a capital of U.S. $37 million; the number of enterprises reached 67 by 1911. Standard Oil tried to penetrate the far east market, but it faced strong opposition by the Dutch and British governments at the end of the 19th century and the beginning of the 20th century.

TABLE 2-7

INDICATED TOTAL DOMESTIC CRUDE AND PRODUCT DEMAND* IN ALL FOREIGN COUNTRIES (INCLUDING RUSSIA) AND QUANTITIES SUPPLIED BY EXPORTS FROM UNITED STATES, YEARS 1865-1942

Year	Indicated total foreign domestic demand (barrels)	Total exports from United States crude and products		Year	Indicated total foreign domestic demand (barrels)	Total exports from United States crude and products	
		Barrels	Percent total demand			Barrels	Percent total demand
1865	825	607	73.6	1904	125,203	24,336	19.4
1866	1,515	1,214	80.1	1905	110,460	30,086	27.2
1867	2,035	1,673	82.2	1906	118,218	31,449	26.6
1868	2,236	1,892	84.6	1907	130,168	32,306	24.8
1869	2,877	2,396	83.3	1908	145,393	38,633	26.6
1870	3,216	2,708	83.4	1909	154,435	39,042	25.3
1871	4,149	3,624	87.3	1910	155,550	37,958	24.4
1872	4,020	3,436	85.5	1911	166,008	43,851	26.4
1873	6,667	5,723	85.8	1912	168,106	45,619	27.1
1874	6,604	5,598	84.8	1913	175,372	52,251	29.8
1875	6,844	5,655	82.6	1914	177,570	54,359	30.6
1876	8,191	6,273	76.6	1915	190,290	56,419	29.7
1877	11,020	8,616	78.2	1916	201,056	62,459	31.1
1878	11,336	8,318	73.4	1917	201,120	64,503	32.1
1879	13,728	10,041	73.1	1918	176,655	68,012	38.5
1880	11,989	8,257	68.9	1919	194,079	63,848	32.9
1881	16,583	12,251	73.9	1920	226,329	79,576	35.2
1882	17,342	11,988	69.1	1921	245,856	71,652	29.1
1883	19,499	12,694	65.1	1922	245,951	74,344	30.2
1884	24,715	12,964	52.5	1923	290,813	101,981	35.1
1885	28,258	13,352	47.3	1924	329,158	117,144	35.6
1886	33,270	14,092	42.4	1925	342,221	113,834	33.3
1887	33,358	13,834	41.5	1926	393,149	131,950	33.6
1888	39,072	13,519	35.5	1927	428,276	141,649	33.1
1889	42,443	16,100	37.9	1928	486,644	154,957	31.8
1890	47,215	16,406	34.7	1929	538,660	163,120	30.3
1891	52,695	15,888	30.2	1930	573,248	156,499	27.3
1892	55,865	17,641	31.6	1931	562,099	124,394	22.1
1893	64,363	20,756	32.2	1932	570,739	103,275	18.1
1894	61,299	21,306	34.8	1933	610,381	106,727	17.5
1895	70,913	20,313	28.6	1934	675,840	114,507	16.9
1896	75,424	22,185	29.4	1935	722,949	128,987	17.8
1897	85,191	23,674	27.8	1936	795,848	131,994	16.6
1898	93,103	23,488	25.2	1937	883,486	172,834	19.6
1899	96,719	22,643	23.4	1938	918,650	193,728	21.1
1900	108,733	23,217	21.4	1939	955,774	188,959	19.8
1901	123,743	25,692	20.8	1940	907,076	130,466	14.4
1902	118,381	25,339	21.4	1941	932,337	108,830	11.7
1903	116,720	22,302	19.1	1942	871,126	116,907	13.4

Source: Total exports from United States (1865-1942), U. S. Geological Survey and Bureau of Mines.
Indicated total foreign domestic demand (1865-1942).
Private information and estimates.

*In thousands of 42-gallon barrels.

Reproduced from: American Petroleum Interests in Foreign Countries. Hearings Before a Special Committee Investigating Petroleum Resources, U.S. Senate, Seventy-Ninth Congress, June 27 and 28, 1945, p. 165.

In 1911 the U.S. Supreme Court judged Standard Oil to be a monopoly and ordered its dissolution; as a result, Standard Oil was divided into 34 companies, among which Jersey Standard (EXXON) and New York Standard have become the largest. The decision by the court to split Standard Oil weakened the U.S. position in the international oil market, but each company expanded its activities in foreign countries independently. The fear of the continuing application of anti-trust law at home persuaded U.S. oil companies to speed up their expansion into foreign countries rather than to concentrate on the U.S. market.

In 1914, with the aid of the U.S. State Department, an agreement was reached between Standard Oil of New York and the Chinese government for oil exploration in China. Also Standard Oil of New York was able to invest in oil exploration in Palestine, Syria, and Asia Minor.

The Supreme Court dissolution decision did not create competition among the Standard Oil companies in the short-run as it was expected, but rather each company operated in cooperation with the others by concentrating on a special area or on certain activities.

The total amount of U.S. investment in the petroleum industry reached U.S. $356 million by 1914. This amount was primarily invested in distribution and refining. Almost one-third of the foreign investment was concentrated in European countries.

1914-1945 period

One of the distinguishing features of this era was that U.S. investment abroad dramatically challenged European enterprises all over the world. Also the world-wide U.S. search for oil intensified as a

result of a very high demand for oil during war time. The great necessity for oil, along with immediate and high profits, encouraged U.S. companies to invest even in areas such as Mexico, despite the political hazards in that country. Table 2-8 presents a historical record of U.S. direct investment by American oil companies in foreign countries for period of 1918-1944.

In 1916, the formation of the Tropical Oil Company, which came about through a monopolistic concession from a French-held company in Columbia, indicated a shift in the State Department policy. It now accepted the "monopolistic concession" by U.S. business in Columbia, which had not been allowed during previous administrations. During 1914-1917 there was constant effort by Standard Oil of New York to explore for oil in China. In 1915 the joint Standard Oil of New York/ China was established, but all attempts to find oil failed due to political and economic reasons (168, pp. 15-16).

Jersey Standard, the largest oil company in the world, during the 1920s regained some of the areas which were lost due to the Supreme Court dissolution decision in 1911. In 1926 Jersey Standard directly re-entered the British market, although it continued relations with the Anglo-American oil company during 1914-1926. In Germany, Jersey Standard renewed its marketing and refining facilities. In Spain, U.S. oil companies had control over the largest oil company in that country from 1922-1927; the company was expropriated by the Spanish government in 1927. In France, the Government asked Jersey Standard for aid to establish a national cartel in France. This request was rejected by Jersey Standard in 1927; however, political factors such as Russian domination

TABLE 2-8

INVESTMENT BY AMERICAN OIL COMPANIES IN FOREIGN COUNTRIES, 1918-1944

(Amounts in Thousands of United States Dollars)

PART I. TOTAL ASSETS EMPLOYED

End of year	Western Hemisphere			Eastern Hemisphere							Total foreign
	North America	South America	Total	Europe	Africa	Europe and Africa	Near and Middle East	South and East Asia	Oceania	Total Near and Middle, and Far East	Total	
1918	85,391	56,904	142,295	107,032	8,772	115,804	277	60,211	20,013	80,501	196,305	338,600
1919	112,997	66,692	179,689	91,369	10,871	102,240	6,585	91,276	19,641	117,502	219,742	399,431
1920	122,789	137,611	260,400	119,019	10,733	129,752	3,164	110,616	22,670	136,480	266,232	526,632
1921	188,774	136,044	324,818	127,663	12,394	140,057	4,670	104,590	38,683	147,943	288,000	612,818
1922	209,274	151,113	360,387	127,711	11,308	139,019	5,826	95,956	39,962	141,744	280,763	641,150
1923	219,249	166,437	385,686	126,706	11,102	137,808	6,110	96,821	40,899	143,830	281,728	667,414
1924	246,927	188,094	435,021	165,571	12,928	178,499	5,429	110,402	44,603	160,434	338,933	773,954
1925	247,541	233,979	481,520	184,406	16,336	200,742	6,306	110,973	51,120	168,399	369,141	850,661
1926	265,784	291,435	557,219	224,343	21,901	246,244	5,681	111,225	62,831	179,737	425,981	983,200
1927	260,275	335,372	595,647	252,883	23,267	276,150	6,071	91,851	75,656	173,578	449,728	1,045,375
1928	277,868	430,988	708,856	290,402	29,177	319,579	8,880	102,040	90,785	207,705	527,284	1,236,140
1929	302,407	476,208	778,615	337,764	39,164	376,928	10,311	115,512	124,018	250,471	627,399	1,406,014
1930	315,522	515,439	830,961	480,574	48,337	528,911	10,468	110,602	142,638	263,708	792,619	1,623,580
1931	290,522	541,333	831,855	419,003	48,345	467,348	10,630	99,121	129,783	239,540	706,888	1,538,743
1932	310,435	711,265	1,021,700	457,295	47,138	504,433	12,377	79,720	131,608	223,714	728,147	1,749,847
1933	316,163	745,223	1,061,386	650,303	50,873	701,176	29,792	75,112	139,239	244,143	945,319	2,006,705
1934	333,262	716,211	1,049,473	649,179	50,109	699,288	39,921	85,132	140,592	265,645	964,933	2,014,406
1935	325,034	728,251	1,053,285	678,366	54,165	732,471	46,973	81,927	147,357	276,257	1,008,728	2,062,013
1936	321,744	763,432	1,085,176	635,611	58,685	694,296	51,302	81,372	148,568	287,242	981,538	2,066,714
1937	321,855	987,959	1,309,814	701,608	61,861	769,469	60,434	91,753	166,947	319,134	1,088,603	2,398,417
1938	303,060	984,413	1,287,473	679,091	67,070	746,161	75,558	77,377	169,268	319,203	1,065,364	2,352,837
1939	297,096	1,058,280	1,355,376	714,911	72,465	787,376	93,100	83,361	180,044	356,505	1,143,881	2,499,257
1940	310,071	1,099,133	1,409,504	497,087	78,575	575,662	103,597	92,090	190,056	386,043	961,705	2,371,209
1941	351,397	1,167,289	1,518,686	331,382	85,674	417,056	117,718	78,347	197,465	393,560	810,616	2,329,302
1942	363,459	1,147,106	1,510,565	335,764	91,262	427,026	126,443	49,630	108,775	284,848	711,874	2,222,439
1943	362,590	1,206,765	1,569,355	353,691	98,988	452,679	147,507	56,669	115,977	320,153	772,832	2,342,187
1944	373,714	1,312,180	1,685,894	200,682	90,760	291,442	202,918	74,205	115,531	392,654	684,096	2,369,990

See footnotes at end of part II of table, p. 166.

TABLE 2-8 (Continued)

PART II. NET ASSETS EMPLOYED

End of year	Western Hemisphere			Eastern Hemisphere								Total foreign
	North America	South America	Total	Europe	Africa	Europe and Africa	Near and Middle East	South and East Asia	Oceania	Total Near and Middle, and Far East	Total	
1918	81,431	53,727	135,158	98,822	8,286	107,108	277	60,088	19,625	79,990	187,098	322,256
1919	101,420	62,834	167,260	86,891	10,416	97,307	6,595	91,193	19,143	116,921	214,218	381,478
1920	103,713	133,565	242,278	111,872	10,125	121,997	3,160	110,642	22,167	135,969	257,966	500,244
1921	165,578	131,278	296,856	116,210	11,648	127,858	4,529	98,847	37,984	141,360	269,218	566,104
1922	176,252	144,875	321,127	114,460	10,439	124,899	5,603	89,967	39,079	134,649	259,548	580,675
1923	182,116	158,116	340,262	114,284	10,171	124,455	5,753	90,319	39,353	135,425	259,880	600,142
1924	202,950	176,686	379,636	149,205	11,841	161,046	4,987	103,088	42,478	150,553	311,599	691,235
1925	195,489	215,777	411,266	161,419	15,148	179,567	5,781	103,085	48,544	157,410	336,977	748,243
1926	211,570	267,659	479,229	195,793	20,475	216,268	4,886	102,558	59,409	166,853	383,121	862,350
1927	205,757	301,470	507,227	216,339	21,336	237,675	5,250	83,033	69,722	158,005	395,680	902,907
1928	217,872	383,002	600,874	243,700	26,754	270,514	7,962	92,587	89,083	189,632	460,176	1,061,050
1929	246,625	410,018	646,643	276,060	35,761	311,821	9,325	104,119	114,192	227,636	539,457	1,186,100
1930	242,554	434,427	676,981	369,562	43,770	413,332	9,501	99,227	128,025	236,813	650,175	1,327,156
1931	217,022	448,419	665,441	329,741	42,998	352,239	9,658	86,582	107,128	203,368	555,607	1,221,048
1932	222,625	539,763	761,388	335,471	39,737	375,208	11,418	66,364	102,506	180,288	555,496	1,316,884
1933	221,840	534,984	756,824	470,264	41,711	511,975	28,546	60,821	101,303	190,670	702,645	1,459,469
1934	240,616	491,630	728,246	467,067	40,823	507,890	38,153	69,998	96,369	204,520	712,410	1,440,656
1935	228,219	481,652	709,901	484,776	43,102	527,878	43,910	65,914	97,529	207,353	735,231	1,445,132
1936	221,716	494,729	716,475	430,566	46,798	477,364	50,313	67,438	93,676	211,427	688,791	1,405,266
1937	222,023	686,864	908,887	498,705	52,053	550,758	54,317	74,290	107,116	235,723	786,481	1,695,368
1938	206,037	662,548	868,585	461,124	53,195	514,319	64,931	59,450	103,152	227,533	741,902	1,610,487
1939	195,141	708,698	903,812	484,952	57,293	542,245	79,867	64,035	109,003	252,905	795,150	1,698,992
1940	205,018	716,767	921,785	346,528	62,137	408,665	88,070	71,621	113,621	273,317	681,982	1,603,767
1941	232,889	751,637	984,526	241,056	67,889	308,945	98,542	58,975	118,293	275,810	584,755	1,569,281
1942	245,000	708,868	953,868	241,651	72,467	314,121	103,369	43,472	80,281	227,122	541,243	1,495,111
1943	236,018	742,690	978,708	256,729	79,432	336,160	121,230	50,094	86,580	257,904	594,064	1,572,772
1944	240,146	813,651	1,053,797	147,907	73,770	221,677	173,658	67,218	85,098	325,974	547,651	1,601,448

[1] For break-down by major activities 1935-44 see table II. Break-down not available prior to 1935.
[2] Covers all assets and investments including current assets and gross fixed capital assets.
[3] Covers all assets and investments, including current assets and fixed capital assets at depreciated values.

Source of data: Tabulation of data from 11 American oil companies and their subsidiaries and affiliates. It is not complete for Europe, Africa, South and East Asia, Oceania in 1940-44 (inclusive) as information submitted was incomplete due to war conditions.

Reproduced from: American Petroleum Interests in Foreign Countries. Hearings Before a Special Committee Investigating Petroleum Resources, U.S. Senate, Seventy-Ninth Congress, June 27 and 28, 1945, pp. 165-166.

in the French oil market forced Jersey Standard to invest jointly in a refining company in 1929. Other large U.S. multinational oil companies which invested in European countries during the 1920s were Vacuum Oil, Texaco, Cities Service, Atlantic Refining, Tide Water, Sun Oil, Standard Oil of New York and Gulf.

The three largest oil companies at that time were Jersey Standard, Royal Dutch-Shell and Anglo-Persian. In 1927, these three giant multinational oil companies provided more than 50 percent of the total refined oil consumed outside U.S. boundaries. During the early 1920s there was some competition among the three giants, but in 1928 they agreed to eliminate any competition and to stabilize the world oil market (Jersey Standard was explicitly excluded because of the U.S. anti-trust law).

A profound strategy taken by U.S. multinational oil companies is called "self-sufficiency" within the enterprise, or vertical integration. This strategy is to have control over all stages of production, processing, transportation and marketing of petroleum. The strategy of self-sufficiency incorporates the advantages of economies of scale due to the high fixed cost involved in petroleum industry.

Few huge oil companies that incorporated vertical integration were able to reduce competition and eliminate non-vertically integrated refining companies by raising the price of crude oil so high that little or no profit was left for refiners and marketers. Another step taken to stop competition was the division of the world oil market among the giant oil producers in a 1928 agreement which maintained the status quo ("as-is" basis) and provided commitment for the exploration of new reserves on a partnership basis.

Another strategy used by the multinationals was to hold a well-diversified source of oil supply to combat any real or threatened shortages in the oil market. The effectiveness of this strategy is discussed later.

The search for oil after WWI in foreign markets was geared to supply consumers at home and U.S. refining affiliates abroad, while before WWI multinational oil company operations in foreign countries were mostly motivated by marketing considerations.

High taxes, the threat of nationalization and many other problems with the Mexican government shifted the attention of oil companies from Mexico to Venezuela.[1] Their experience in Mexico made the oil companies extremely cautious about investing in Venezuela and other Latin America countries.

During the late 1920s, U.S. multinational oil companies realized that U.S. oil could not compete with the cheap Russian oil in the European market. Therefore companies such as Vacuum Oil and Standard Oil of New York purchased Russian oil to sell in Europe; this was the only effective way for the U.S. companies to gain access to Russian oil.

The 1920s can be called the era of penetration in Middle Eastern Countries. The U.S. oil companies were able to explore rich sources of oil in Iraq, Turkey, Kuwait, and Bahrain. The problem for the U.S. companies in Middle Eastern Countries did not come from the host governments of those nations but from Britain and other European countries who

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[1]For example, Mexican oil output peaked at 193 million barrels and Venezuelan output at 1.4 million barrels in 1921, while by 1928 Venezuela was producing 106 million barrels and Mexico oil production had dropped to 50 million barrels.

imposed restrictions or otherwise blocked the involvement of the U.S. oil companies. The British government requested that foreign companies get approval from the colonial office in London for any concession in Bahrain. With the help of the U.S. state department, concession was obtained in 1929 to form the Bahrain Petroleum Company, but the British government did not allow the U.S. oil companies any concession in Iran.

Following the change in the U.S. state department policy on antitrust law, in July, 1931, with the permission of the U.S. Justice Department, Standard Oil of New York and Vacuum oil company merged and formed Socony-Vacuum Oil Company--the second largest oil company after Standard Oil of New Jersey. During the 1930s, mergers within U.S. oil companies and U.S. oil companies and foreign oil companies became a new strategy for multinational oil companies to strengthen their positions at home and abroad. Some of the U.S. oil company mergers with foreign companies are listed in Table 2-9. The two U.S. joint ventures in foreign countries most important for this study are described below.

The first of these is the joint venture in 1930 between three giant American oil companies--Jersey Standard, Gulf Oil and Atlantic Refining--and the French government to build a large refinery in France. The French objectives were to save the scarce exchange rate by importing cheap crude oil and refining it domestically and to reap other benefits such as increasing employment and incorporating the technology embodied in the refining process. The second important joint venture is the 50-50 joint venture between Associated Oil and Mitsubishi Oil Company to establish a refinery in Japan. The two partners in this undertaking agreed that the U.S. company would contribute technology and crude oil,

TABLE 2-9

PRINCIPAL NEW JOINT VENTURES BY AMERICAN OIL COMPANIES ABROAD IN THE 1920s

Name of joint company	Date of formation joint venture	Companies involved	Purpose of joint venture	Area of operation
Société Franco-Américaine de Raffinage	1930	Jersey Standard Gulf Oil Atlantic Refining	Refining	France
Mitsubishi Oil Co.	1931	Associated Oil Co.[1] Mitsubishi	Refining Marketing	Japan—and parts of East Asia
Standard-Vacuum Oil Co. (Stanvac)	1933	Socony-Vacuum Jersey Standard	Producing Refining Marketing	Asian and African countries east and southwest of the Persian Gulf and Oceania
Kuwait Oil Co., Ltd.	1934	Gulf Anglo-Iranian	Production	Kuwait
Bahrein Petroleum Co., Ltd.	1936	Calif.-Standard Texaco	Production	Bahrain
California Texas Oil Co. (Caltex)	1936	Calif.-Standard Texaco	Marketing	Asia, Oceania, South and East Africa
California Arabian Standard Oil Co. (later, 1944, Arabian American Oil Company, or ARAMCO)	1936	Calif.-Standard Texaco	Production	Saudi Arabia
NV Nederlandsche Pacific Petroleum Maatschappij	1936	Calif.-Standard Texaco	Exploration	Sumatra, Java
Colombian Petroleum Co. (Barco Concession)	1936–1937	Texaco Socony-Vacuum	Production	Colombia
Mene Grande Oil Co. (physical assets only)	1937	Gulf, International Petroleum Company (a Jersey Standard affiliate); Royal Dutch-Shell	Production Refining	Venezuela

Source: See notes 12–29.

[1] Tide Water Associated Oil Co. in 1936 took over the properties of its subsidiary Associated Oil Co.

Reproduced from: Mira Wilkins, The Maturity of Multinational Enterprise: American Business Abroad from 1914-1970, Cambridge, Massachusetts: Harvard University Press, 1974, p. 212.

but that the merger company remain fully in control of the Japanese company; members of the Japanese firm held positions as the three top officers of the merger company.

In the early 1930s the depression and the declining price of oil put the oil companies in a defensive position. As a result, the leading international enterprises (Standard Oil of New Jersey, Royal Dutch-Shell, and Anglo-Persian) prepared a "Memorandum for European Markets" setting conditions for stabilizing prices. Later other oil companies joined this agreement.

During the 1930s, direct foreign investment abroad by U.S. oil companies expanded rapidly. By 1939, for instance, the total number of U.S. refineries in foreign countries had reached 58, of which 39 operated in consuming countries and 19 operated in producing countries. The oil refineries in consuming countries were mostly concentrated in European countries; the oil companies were forced to build refineries as a part of the European "Self-Sufficiency" program.

The distribution of foreign oil refineries among U.S. oil companies and the distribution by country of oil refineries abroad is given in Table 2-10.

A comparison between the position of oil companies in 1929 and their position in 1939 indicates a significant development in U.S. multinational companies. In 1939 ten American oil companies--Jersey Standard, Socony-Vacuum, Gulf, Standard of California, Texaco, Atlantic Refining Company, Cities Service, Sinclair Oil, Sun Oil and Water Associated Oil--had made over 90 percent of the U.S. oil investment abroad. The first five American oil companies plus the Anglo-Iranian Oil Company

TABLE 2-10

DISTRIBUTION OF U.S. OIL REFINERIES ABROAD IN 1939

(By Industry)

Industry	Number of Refineries
Standard Oil of New Jersey	28
Socony-Vacuum	15
Texaco	7
Others	8
Total	58

SOURCE: Derived from Mira Wilkins, The Maturity of Multinational Enterprise: American Business Abroad from 1914-1970, Cambridge, Massachusetts: Harvard University Press, 1974, p. 239.

and British-Dutch Royal Dutch Shell constituted the seven major multinational oil companies in 1939, while in 1929 only Jersey Standard and the two English companies were considered to be giant multinational oil companies.

During the war period 1940-1945, the overall amount of foreign direct investment did not change significantly. In some areas, such as Europe, foreign direct investment declined substantially, due to the war destruction of manufacturing facilities, Table 2-11.

The high demand for raw materials and primary products during WWII encouraged U.S. enterprises to concentrate more on production of raw materials and less on manufacturing abroad. Of course, crude oil was vitally important, and the U.S. oil companies expanded their search for new oil in Latin America and the Middle East during and after the War.

TABLE 2-11

GEOGRAPHICAL DISPERSION OF AMERICAN

REFINERIES IN 1939

Area	No. of refineries	
Canada	11	
The Caribbean (Cuba, 1; Aruba, 1; Trinidad, 2)	4	
Latin America (Colombia, 2; Peru, 2; Venezuela, 4; Argentina, 5)	13	
Total Western Hemisphere		28
Europe (Austria, 1; Belgium, 2; Bulgaria, 1; Czechoslovakia, 1; France, 4; Germany, 7; Great Britain, 1; Hungary, 1; Italy, 3; Norway, 1; Poland, 2; Rumania, 2; Yugoslavia, 1)	27	
Middle East (Bahrain, 1)	1	
Asia (Dutch East Indies, 1; Japan, 1)	2	
Total Eastern Hemisphere		30
TOTAL		58

Source: Based on U.S. Senate, Special Committee Investigating Petroleum Resources, *American Petroleum Interests in Foreign Countries, Hearings* (Washington, D.C. 1946), pp. 205–207.

*The small joint-venture refineries of Socony-Vacuum and Texaco in Colombia and Argentina are also counted twice in the attributions.

Reproduced from: Mira Wilkins, The Maturity of Multinational Enterprise: American Business Abroad from 1914-1970, Cambridge, Massachusetts: Harvard University Press, 1974, p. 239.

The period, 1945 and after

World War II created a drastic change in U.S. foreign policy in general and in its policy on foreign direct investment in particular. The formation of international organizations for the reconstruction of European countries and the development of less developed countries on the one hand and the extension of the Soviet power in Eastern Europe on the other forced the U.S. to play a great role in maintaining the status-quo situation.

The U.S. oil companies received tremendous attention and encouragement from the U.S. government during and after the war, but they encountered a great number of problems abroad. They faced expropriation (in Poland, Czechoslovakia, Yugoslavia, Rumania, Hungary, East Germany, and China), political instability, labor difficulties, restriction on repatriation of profit and discriminating regulations by the governments of the host countries. Despite these difficulties they expanded their operations in foreign countries, Table 2-12. After WWII, many small oil industries entered the international oil market. This reduced the production share of the seven oil companies, which had been producing 90 percent of the world oil outside of North America and Communist countries, to 75 percent in 1968.

TABLE 2-12

U.S. DIRECT FOREIGN INVESTMENTS BY AREA 1940-1946

(Book Value in Billion U.S. Dollars)

Area	1940	1946
Canada	2.1	2.5
Latin America	2.8	3.1
Europe	1.4	1.0
Middle East and Africa	0.2	0.2
Other Areas	0.5	0.4
Total	7.0	7.2

SOURCE: U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce, American Direct Investment in Foreign Countries--1940 (Washington, D.C., 1942), pp. 4-5 (1940 figures). U.S. Department of Commerce, Office of Business Economics, U.S. Business Investments in Foreign Countries (Washington, D.C., 1960), p. 1 (revised 1946 figures).

In Europe the U.S. oil companies started to rebuild or repair their refineries. The policy of the European governments was still based on saving the scarce foreign exchange; therefore the refineries expanded faster than during the prewar time. Unlike the prewar situation when oil companies were reluctant to build refineries in Europe, the vast increase in the production of cheap Middle Eastern oil provided a mutually beneficial situation for the European countries and U.S. oil companies; crude oil was imported and refined in European countries.

The establishment of the Petroleum Administration for Defense (P.A.D.) by President Truman in 1951, which exempted oil companies from antitrust prosecution, encouraged multinational oil companies to expand their operations at home and abroad. In 1952, the U.S. agreed to reduce duties on oil imports from Venezuela. In 1953, the U.S. became a net importer of petroleum and petroleum products. Table 2-6 (p. 35) indicates that the U.S. policy to promote the petroleum industry was very successful. During 1946-1950 foreign direct investment by the petroleum industry increased 143 percent, and during 1950-54 its rate of growth was greater than that of the manufacturing sector.

High profit in the Middle East attracted many American companies to that area. However until 1953 the U.S. companies were not able to penetrate the Iranian oil industry because of strong opposition by the United Kingdom. In 1951, the Iranian Congress voted for the nationalization of the oil industry, which had been controlled by the British-owned Anglo-Iranian Company. A successful embargo by oil companies for two years cut Iran's major financial source and, finally, by an arranged coup, the government of Mohammed Mossadegh collapsed. Soon afterwards,

the American companies formed a consortium with the Anglo-Iranian company, and the French, British and Dutch companies. U.S. oil company involvement in Iran might have been because of the pressure exerted by the U.S. government. As a Jersey Standard director stated, "We would have made more money if we had done added drilling in Saudi Arabia; we had plenty of oil there. We were pushed into the consortium by the United States government" (168, p. 322).

In September, 1960, the four major oil-producing countries in the Middle East (Iran, Iraq, Kuwait, and Saudi Arabia) joined Venezuela to establish the Organization of Petroleum Exporting Countries (OPEC).[1] The objective of OPEC was to stabilize the price of oil and prevent fluctuation in oil revenue. The organization successfully raised the price of oil during the late 1960s.

Following the Arab-Israeli war in 1967, U.S. marketing and refining interests were nationalized by the Algerian government. In 1970, the government of Libya nationalized the four distributing companies, but not the producing oil companies.

Despite nationalization in these Middle Eastern countries the American oil companies still held a dominant position in the Middle East. A more important event in the 1970s was the OPEC oil embargo, which made the industrial nations, especially the European countries, realize the importance of oil to their economy. A gradual reduction in the consumption of oil was expected as the European Countries substituted other alternative sources of energy.

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[1] Later, some other oil producing countries joined the organization.

The Economic Impact of Foreign Direct Investment

The flow of direct investment from the U.S. to European and less developed nations increased after WWII. The government contributed to the transfer of capital directly or through International Organizations, but the private sectors--mostly multinational corporations--were the primary source of direct investment to the host countries. Multinational corporations are equipped with advanced techniques in production, marketing and distributions, they have better access to financial sources and are better informed about international market conditions. Therefore, theoretically, foreign direct investment should be an efficient and fast channel of development. In this regard, Pazos (116, p. 196) says ". . . if it comes in adequate volume to the proper fields and is accompanied by the necessary amounts of loans to finance overhead capital facilities, direct investment is a short-cut to development."

The full economic impact of foreign direct investment is hard to measure; there are many economic externalities, as well as diseconomic externalities, related to the flow of direct investment which cannot be quantified, either because of the complex interrelation among variables or because of the lack of adequate information. Accordingly, only limited aspects of the importance of the contribution of capital import are analyzed here.

Under the proper conditions capital import of any kind can contribute to the growth and development of the recipient country. Some of the issues related to the available effect of capital import on the development of host nations discussed in this section are as follows: 1) Absorption problem; 2) Effect of capital transfer on employment;

3) Effect of capital movement on local investment, and 4) Import substitution and export development.

Absorption problem

The question raised by many economists concerns "proper" use of capital: Whether imported capital motivates the idle capacity present in host nations; whether it is allocated in the proper places to match the need of a balanced growth in a host country; or, by contrast, whether capital is misplaced, wasted or moved back to the donor or investors' country.

Capital may move from a less developed country (recipient) to a more industrialized nation (donor) under certain conditions, such as lack of organized banking system, the presence of a corrupt government, or the lack of adequate knowledge and human resources. The situation in some of the oil exporting countries and in several Latin American countries provides examples of this type of outflow of capital. Moreover, an overvalued exchange rate may cause capital to flow from a host country to an advanced country with a more stable exchange rate. Finally, if imported capital is not applied for productive purposes, the inflow of capital may induce inflationary pressures and may lead to its transfer from the recipient country.

Effect of capital transfer on employment

The impact of imported capital on employment depends on the nature of the capital and the labor condition of the host countries. A "capital-intensive" foreign direct investment in a developed country that is characterized by a scarce labor force creates employment in the

foreign sector where capital is applied and probably unemployment in domestic sectors involved in the same line of production. However, the overall employment effect depends on the competitiveness of domestic industries with the foreign rivals and other economic and political constraints prevailing in the host country. Transfer of a "capital intensive" technology to a less developed nation usually generates some employment in the sector or industry where foreign capital is applied, but the overall employment effect may be small or negative. This is because of the following reasoning.

A great portion of the population in less developed countries is employed in the agricultural sector, with a very low productivity and in the industrial sector mostly in traditional forms. Both sectors apply "labor-intensive" technique in production. The emergence of advanced techniques embodied in foreign investment takes jobs away from the local producers in both sectors of the economy, creating a great deal of unemployment. A report from Indonesia in The Wall Street Journal, October 27, 1979, shows an example of this relationship between employment and MNCs in less developed countries:

> . . . Multinationals' third-world investments are exceeding $70 billion, but the United Nations says these firms have created fewer than four million jobs for the 680 million third-world people who need that. Indonesia's planning agency has discovered that exports which have multiplied eight-fold with the aid of foreign oil and minerals companies, support 60,000 fewer jobs today than they did back in 1971.

Effect of capital movement on local investment

According to Kafka (84, p. 217), foreign capital constitutes 25 percent of the gross domestic investment in developing countries as

a group. The question is what effect this foreign capital has on domestic investment.

Foreign entrepreneurs generally have better access to capital with a lower rate of interest than the local entrepreneurs, assuming all other factors remain the same. Thus, the local producers who rely on local capital with a higher interest rate may lose their competitive edge.

The effect of foreign direct investment on local savings depends also on the type of goods produced by foreign corporations. If foreign investors undertake projects which provide capital goods and develop infrastructure and basic necessities for industrialization they will tend to stimulate local saving and cause expansion of domestic production through the so-called backward and forward linkage. On the other hand, production of consumptive goods by foreign corporations drain local savings and make the local people accustomed to foreign products, which may lead to a reduction in domestic investment.

Import substitution and export development

The effect on the overall economic growth of a host country differs according to whether foreign corporations operate in import substitution industries or whether they invest in export development. Multinational corporations invest, or are compelled to invest (as in the case of establishment of refineries in Europe by oil industries as discussed in section 4 of this chapter), in import substitution industries in developed countries where advanced technology and high capital are required. The "spread effect" of this sector to the economic

development is substantially high. By contrast, multinational corporations' activities in LDCs historically have mostly concentrated in exploration for raw materials, natural resources or the development of plantations. The results of these activities have been the development of limited areas and industries in which corporations have invested, lessened technology advantage to the domestic industries and local human resources, a higher gap between the rich and the poor, and greater economic and social dualism.

CHAPTER III

PERFORMANCE AND POLICIES OF MULTINATIONAL CORPORATIONS AND HOST COUNTRIES' RESPONSES

Introduction

Some optimists regard multinational corporations as an efficient and powerful tool for progress; others believe the presence of multinational corporations hinders the socio-economic development and political sovereignty of host countries. Multinational companies have faced many problems and restrictions throughout their existence in host countries. The extent of these problems has varied from country to country and according to the time and nature of the industries.

The first objective of this chapter is to examine MNC performance, efficiency, competitiveness and approaches (as reflected in their major policies). These items are addressed in part one of the chapter. The second objective is to explore the responses of a few developed and less developed host countries to the operations of MNCs. This is the main concern of part two of this chapter.

MNCs' Performance and Policies

MNCs' oligopolistic nature, well organized management and highly trained professionals provide them with great opportunity not only to be competitive but also to be able to eliminate competitors,

when necessary. The first section of this part presents an analysis of the efficiency of the multinational enterprises from a different point of view. In the second section, the monopoly/competition issue, as it pertains to multinational oil companies, is examined. In the third section, one of the most controversial policies of multinational corporations, the so-called transfer pricing, is discussed. In the fourth section, diffusion of technology through direct foreign investment to less-developed host nations is examined. And, finally, section five contains a comparative analysis of foreign direct investment in a few developed and developing nations.

Efficiency of Multinational Corporations

> Multinational Corporations are typically large firms operating in imperfect markets and the question of their efficiency is a question of the efficiency of oligopolistic decision making, an area where much of welfare economics breaks down, especially the proposition that competition allocates resources efficiently and that there is a harmony between private profit maximization and the general interest (Stephen Hymer, 70, p. 441).

Most often the response to complaints about the domination of few giant companies over one industry, or even over the economy of a country, is that big companies are more efficient in optimal allocation of resources relative to smaller companies, because of the advantages of economies of scale. There is no doubt that the size and international scope of a firm are important factors in its effectiveness and strength, but a firm can benefit from the economies of scale only up to a certain minimum size. Therefore, a large firm does not necessarily represent the most efficient one.

The emergence of multinational corporations in today's world economy has been a positive factor for transferring technology and

and capital and organizational skills from one nation to another. At the same time, MNCs have had a negative effect on the free trade market. Improvement in communication and transportation allows more connection among different markets around the globe thus reducing trade barriers while monopolizing a product--leaving few choices for the consumer. Two tendencies are observed in this process: one leads the economy to perfect competition and one forces the economy away from perfect competition.

Hymer (70, 71) believes that the principles of free trade and perfect competition are not applicable to direct foreign investment because of the "anticompetitive" structure "inherently" embodied in foreign direct investment. A country trying to sell commodities to and buy capital and technology from a multinational corporation must use skill and bargaining power. Less developed countries are typically characterized by a weak administration and very little knowledge about the international market. They usually lack the negotiation power necessary for dealing with the large companies, who are extremely knowledgable about the market and have excellent negotiation skill. Typically, an LDC government provides protection and some services for foreign corporations and in return expects to receive taxes and contributions to the development of infrastructures. The host government tries to structure taxes to minimize the profit gained by the corporations. The corporations, in turn, maximize their profits after taxes. Even if the government is strong and imposes a high tax rate, multinational corporations in many cases are able to minimize their tax payments through transfer pricing and other methods.

The economic policies of countries that are highly dominated by multinational corporations can be affected by the decisions of the corporations, regardless of the individual country's stage of economic development. Therefore, host countries can expect to gain economic development at the cost of economic independence.

Competition Versus Monopoly; Special Case of Oil Companies

In the previous section, mention was made that non-competitiveness is embodied in foreign direct investment. This concept, as it pertains to direct investment in the petroleum industry, is analyzed in more detail in this section.

While testifying before the U.S. Senate's Special Subcommittee on Integrated Oil Operations in January of 1974, Walter Adams and Joel Dirlam, two leading authorities on monopoly and antitrust, stated that, "The petroleum industry is a government-sanctioned, government-supported, government-subsidized cartel . . . reinforced by a honeycomb of private restraints which systematically stifle and suppress competition" (Wilson, 172, p. 35).

An industry is competitive if an adequate number of firms which are self-motivated and independent constitute that industry. This has not been the case for the petroleum industry; in fact, interdependence among petroleum companies is much more evident that independence.

Throughout the history of the oil industry, oil companies have encountered many problems and been subject to many regulations; consequently, they have learned through experience how to deal with the problems and how to unify their actions to further their best interests.

Some of the strategies applied by oil companies to avoid risk and to exercise their oligopolistic power are as follows:

Diversification in alternative sources of energy

A few major oil companies through the history have been able to dominate the international oil industry and control a substantial share of the production of other sources of energy, such as gas, coal, uranium and tar sands. Control over diversified sources of energy by one or by a few companies makes the substitution of one source of energy for another difficult for the consumer when a shortage or an increase in price occurs. It allows the company to exercise monopolistic power over prices and productions. Table 3-1 shows the diversification in the energy industry for the twenty-five largest petroleum companies, ranked by their assets as of early 1970.

Vertical integration

Vertical integration is another common strategy used by industry to increase the companies' power and lower the risk offered by present or future rivals. The seven major oil companies have control over all stages of operations from ownership of oil reserves through production, transportation, refining, and marketing.

Vertical integration is considered to be a means for attaining self-sufficiency within the enterprise in production, processing, transportation and marketing of petroleum. The strategy of self-sufficiency, in part, creates an enormous advantage of economies of scale for the oil companies. The worldwide development of and control over refining and marketing facilities, as a part of a self-sufficiency strategy, has been

TABLE 3-1

DIVERSIFICATION IN THE ENERGY INDUSTRIES BY THE TWENTY-FIVE LARGEST PETROLEUM COMPANIES, RANKED BY ASSETS AS OF EARLY 1970

Petroleum Company	1969 Assets ($ Thousand)	Rank in Assets	Energy Industry: Gas	Oil Shale	Coal	Uranium	Tar Sands
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Standard Oil (N.J.)	17,537,951	1	X	X	X	X	X
Texaco	9,291,573	2	X	X	X	X	
Gulf	8,104,824	3	X	X	X	X	X
Mobil	7,162,934	4	X	X		X	
Standard Oil (Calif.)	6,145,675	5	X	X			
Standard Oil (Ind.)	5,150,677	6	X	X		X	X
Shell	4,356,222	7	X	X	X	X	X
Atlantic Richfield	4,235,425	8	X	X	X	X	X
Phillips Petroleum	3,102,280	9	X	X		X	
Continental Oil	2,836,516	10	X	X	X	X	
Sun Oil	2,529,211	11	X	X	X	X	X
Union Oil of California	2,476,414	12	X	X		X	
Occidental	2,213,506	13	X		X		
Cities Service	2,065,600	14	X	X		X	X
Getty	1,859,024	15	X	X		X	
Standard Oil (Ohio)	1,553,591	16	X	X	X	X	
Pennzoil United, Inc.	1,356,532	17	X			X	
Signal	1,258,611	18	X				
Marathon	1,221,298	19	X	X			
Amerada-Hess	982,157	20	X			X	
Ashland	846,412	21	X	X	X	X	
Kerr-McGee	667,940	22	X		X	X	
Superior Oil	494,025	23	X	X			
Coastal States Gas Producing	490,190	24	X				
Murphy Oil	343,914	25	X				

SOURCE: John W. Wilson, "Competitive Market Structure and Performance in the Petroleum Industry," in Energy Impacts on Public Policy and Administration, Edited by Walter F. Scheffer (Norman, Oklahoma: University of Oklahoma Press, 1974), p. 60.

the major focus of multinational oil companies. Through this policy, multinational oil companies have been able to prevent the lowering of prices of petroleum products by sellers who have access to cheaper sources of supply.

Mergers and acquisitions

Another oil industry policy is to foster coordination and cooperation among different companies through mergers and acquisitions. Despite U.S. antitrust laws, there have been numerous mergers and acquisitions in the petroleum industry. After WWII, many small firms entered the national and international oil industry, but were absorbed or eliminated by the big multinational companies. Table 3-2 shows some of the mergers within the oil industry during 1949-1970.

Interrelation and partnership

In order to coordinate domestic and international activities of different companies in the oil industry, one executive or a group of them often directs the operation of several companies. For example, the directors of EXXON, Mobil, Texaco, Chevron, Shell, Gulf and British Petroleum are the same men who determined the policies of Arabian American Oil Company, the Iraq Petroleum Company, the Kuwait Oil Company, and the Iranian Consortium (Wilson, 172). Since one person cannot be appointed as director of several firms, therefore, employees of one big company or financial institution may formally be appointed as executives of several other companies. According to a 1968 Congressional survey, employees of Morgan Guaranty and Trust Co. of New York were serving as directors on the board of Continental Oil, Cities Service, Atlantic Richfield, Belco Petroleum, Colombia Gas, Louisiana Land and Exploration Company, and Texas Gulf Sulphur.[1] Alternatively a few oil

[1]House of Representatives, Committee on Banking and Currency, Staff Report for the Subcommittee on Domestic Finance, Commercial Banks and Their Trust Activities, 90th Congress, 2nd. Sess. (July 9, 1968).

TABLE 3-2

RECENT MAJOR PETROLEUM INDUSTRY MERGERS

Date	Acquiring Company	Assets ($ Mil.)	Acquired Company	Assets ($ Mil.)
1949	Union Oil Co.	298.4	Los Nietos Co. 1/	13.3
1950	Sunray Oil Co.	131.4	Barnsdall Oil Co.	87.2
1954	Chicago Corp.	46.9	Champlin Refining	
1954	General American Oil 1/	36.0	Deep Rock Oil 1/ */	
1954	Monterey Oil Co. 1/	33.1	Fullerton Oil 1/	23.7
1955	Sinclair Oil	1,186.8	Am. Republics Corp.	41.?
1955	Tennessee Gas Trans. 2/	742.5	Bay Petroleum Corp.	29.6
1955	Kerr McGee Oil	43.3	Deep Rock Oil Corp. */	12.0
1955	Monsanto Chemical **/	376.5	Lion Oil Co.	147.6
1955	Sunray Oil Co.	300.0	Mid-Continent Petr.	186.3
1955	Delhi Oil Corp. 1/	21.8	Taylor Oil & Gas	36.5
1956	Atlantic Refining	611.6	Houston Oil of Tex. 1/	77.5
1956	American Petrofina	57.1	Panhandle Oil	15.7
1956	Sinclair Oil	1,250.1	So. Production Co.	77.4
1956	Standard Oil of Ind.	2,332.4	Utah Oil Ref.	54.6
1956	Gulf Oil Corp.	2,160.8	Warren Petr.	163.9
1958	Mobil Oil	3,105.3	Freeport Sulphur */	100.0
1958	Signal Oil & Gas 1/	128.0	Hancock Oil Co.	62.7
1958	Tennessee Gas Trans. 2/	1,096.8	Middle States Petr. 1/	29.4
1958	Texaco	2,729.1	Seaboard Oil 1/	93.1
1959	Signal Oil and Gas 1/	210.0	Bankline Oil Co.	13.2
1959	Continental Oil	619.7	Intl. Refineries	12.1
1959	Continental Oil	619.7	Kewanee Oil 1/ */	
1959	Continental Oil	619.7	San Jacinto Petrol 1/	35.6
1959	Sunray Mid-Continent	540.8	Suntide Refinery	41.9
1960	W. R. Grace Co. **/	529.6	Cosden Petroleum	67.0
1960	Standard of N. J.	9,894.7	Monterey Oil 1/	102.2
1960	Union Oil & Gas 1/	63.3	Tex. Nat. Gasoline 1/	52.3

TABLE 3-2

(Continued)

Date	Acquiring Company	Assets ($ Mil.)	Acquired Company	Assets ($ Mil.)
1965	Panhandle Eastern 2/	407.9	Ambassador Oil Corp. 1/	28.8
1965	Union Oil of Cal.	916.5	Pure Oil	766.1
1966	Husky Oil	112.2	Intl. Oil & Gas 1/	11.8
1966	Witco Chemical **/	93.1	Kendall Refining	21.9
1966	Sinclair Oil	1,694.5	Barber Oil 1/ */	
1966	Atlantic Refining	960.4	Richfield Oil	499.6
1966	Phillips Petrol.	2,029.1	Tidewater Oil */	372.8
1967	Getty Oil Co.		Tidewater Oil Co.	
1967	Husky Oil	141.5	Frontier Ref.	41.2
1967	Tenneco Corp.	1,252.3	Kern County Land 1/	706.4
1967	Diamond Alkalai **/	275.6	Shamrock Oil & Gas	173.7
1968	Panoil Co. 1/	21.3	Dorchester Gas Prod. 1/	14.7
1968	Sun Oil Co.	1,598.5	Sunray DX Oil Co.	749.0
1968	Intex Oil Co. 1/	5.8	Tesoro Petrol. (Tex.) 1/	12.3
1965	Swift & Co. **/	757.8	Bell Oil & Gas	18.6
1969	Amerada Petrol.	471.1	Hess Oil	491.5
1969	Mesa Petrol.	14.5	Hugoton Prod. 1/	14.3
1969	Ashland Oil	846.4	Midhurst Oil 1/	14.7
1969	Atlantic-Richfield	2,450.9	Sinclair Oil	1,851.3
1970	Standard of Ohio	772.7	British Petrol. Corp. */	627.3
1970	French Petrol. Can. 1/		Leonard Refineries	56.1
1970	Ashland Oil	846.4	Northwestern Ref.	60.1
1970	Wiser Oil 1/	6.4	Petroleum Explor. 1/	21.4
1970	Swift & Co. **/	744.1	Transocean Oil 1/	47.3

1/ Primarily a Producer. Firms without footnotes are integrated refiners.
2/ Interstate gas pipeline Co.
*/ Partial acquisition involving less than 100% of acquired firms total assets.
**/ Firm classified as being primarily in another industry (i.e., major business is not petroleum production or refining).

Source: Federal Trade Commission, Large Mergers in Manufacturing and Mining 1948-1971.

TABLE 3-2

(Continued)

Date	Acquiring Company	Assets ($ Mil.)	Acquired Company	Assets ($ Mil.)
1960	Pure Oil Co.	552.9	Woodley Petroleum 1/	30.1
1960	Continental Oil	832.5	Douglas Oil Co.	18.2
1961	Cities Service	1,342.6	Felmont Petroleum 1/ */	
1961	Standard of Indiana	2,925.7	Honolulu Oil 1/	99.2
1961	Murphy Corp. 1/	120.6	Ingram Oil & Ref.	14.8
1961	Standard of Cal.	2,782.3	Standard of Ky.	141.9
1961	Delhi Taylor Oil	71.5	Three States Nat. 1/	18.9
1962	Cities Service	1,405.7	Columbian Carbon **/	88.9
1962	Standard of N. J.	10,494.4	Olin Oil & Gas	57.0
1962	Marathon Oil	469.9	Plymouth Oil Co.	80.8
1962	Texaco	3,646.7	T.X.L. Oil 1/	36.7
1962	Consolidated Oil & Gas 1/	4.9	Tekoil Corp. 1/	12.4
1962	Union Oil of Cal.	761.5	Tex. Nat. Petrol. Co. 1/	37.0
1962	Sinclair Oil	1,507.2	Texas Butadiene	42.7
1962	Allied Chemical **/	800.8	Union Texas Nat. Gas 1/	165.2
1963	Continental Oil	1,241.1	Cities Service Gas 1/ */	
1963	American Petrofina	89.8	Cosden Petr./Grace */	73.9
1963	Sinclair Oil	1,515.3	Drill. & Explor. Co. 1/	19.5
1963	Sunset International 1/	47.7	Sunoc Petrol. 1/	12.3
1963	Sinclair Oil	1,515.3	West Nat. Gas 1/	76.4
1964	Livingston Oil 1/	19.1	Crescent Oil 1/	
1964	Continental Oil	1,462.8	Delhi Taylor Oil 1/ */	52.4
1964	Tennessee Gas Trans. 2/	2,234.2	Delhi Taylor Oil 1/ */	52.4
1964	Shell Oil Co.	2,138.8	El Paso Natural Gas */	
1964	Standard of Indiana	3,206.6	Midwest Oil Corp. 1/	62.7
1964	Mobil	4,659.3	Northern Nat. Gas Prod. 1/ */	
1964	Sinclair	1,618.9	Texas Gulf Prod. Co. 1/	69.7
1964	Tennessee Gas Trans. 2/	2,234.2	Wilcox Oil Co.	13.7

Reproduced from: John W. Wilson, "Competitive Market Structure and Performance in the Petroleum Industry," in Energy Impacts on Public Policy and Administration, Edited by Walter F. Scheffer (Norman, Oklahoma: University of Oklahoma Press, 1974), pp. 61-63.

companies may hold the partnership of several other companies. For example, Aramco is owned by Texaco, EXXON, Chevron, and Mobil; Iraq Petroleum by British Petroleum (B.P.), Shell, EXXON, and Mobil; Kuwait Oil by Gulf and B.P. Also, the Abu Dhabi Petroleum Co. is controlled by B.P., Shell, EXXON, and Mobil, and Iranian Oil Participants, Inc., in 1974, was owned by Mobil, EXXON, Chevron, Texaco, Gulf, B.P., Shell and others (Wilson, 172). Furthermore, the type of interrelation and coordination between major oil companies varies from crude oil exchange agreements to trading technical information.

Geographical diversification

The oil companies' experience with nationalization and expropriation in South America, Europe and the Middle East have led companies to diversify their sources of production to avoid threatened or real shortages in production. Table 3-3 presents the geographical distribution of U.S. foreign direct investment for a few selected years.

The market share approach

The 1928 agreements among major oil companies led to a series of commitments by the oil companies to divide up the world oil market, on an "as is" basis to prevent unnecessary competition. According to an "as is" agreement, the exploration for new oil reserves should be done on a partnership basis.

The above observations clearly demonstrate that the structure and performance of the petroleum industry have been far from competitive, but regulations and anti-trust laws at home, and regulations, nationalization, and expropriation abroad have limited their monopolistic power to some extent.

TABLE 3-3

AMERICAN DIRECT INVESTMENTS IN FOREIGN COUNTRIES, BY GEOGRAPHIC AREAS, 1929, 1936, 1940, 1960, 1970, AND 1980

Area and country	In thousands of dollars—			Percentage of grand total—		
	1929	1936	1940	1929	1936	1940
Canada	2,010,320	1,936,193	2,098,941	26.70	28.93	29.98
Newfoundland	(1)	15,448	3,753	(1)	.24	.06
Total	2,010,320	1,951,641	2,102,694	26.70	29.17	30.04
Europe:						
Austria	14,337	5,738	(2)	.19	.09	(2)
Belgium and Luxembourg	64,246	34,890	17,004	.85	.52	.24
Czechoslovakia	4,875	4,725	7,730	.07	.07	.11
Danzig, Estonia, Latvia, and Lithuania	10,124	1,701	1,297	.13	.03	.01
Denmark	15,821	13,778	19,691	.21	.21	.29
Finland	956	1,643	5,502	.01	.03	.09
France	145,009	145,683	117,199	1.93	2.17	1.67
Germany	216,514	227,817	349,399	2.88	3.41	[3]4.99
Greece	5,136	8,508	6,012	.07	.13	.09
Hungary	7,870	9,306	13,069	.11	.13	.19
Irish Free State	2,129	315	2,085	.03	.001	.03
Italy	113,216	70,181	75,493	1.50	1.05	1.09
Netherlands	43,224	18,836	18,167	.57	.28	.26
Norway	22,970	26,681	30,945	.31	.40	.44
Poland	51,193	33,500	29,019	.68	.51	.41
Portugal, including Azores and Madeira Islands	11,546	5,719	7,050	.16	.09	.10
Rumania and Bulgaria	14,648	43,952	51,233	.20	.66	.73
Spain, including Canary Islands	72,230	80,532	73,396	.96	1.21	1.04
Sweden	19,230	25,493	26,361	.25	.37	.37
Switzerland	16,801	8,634	23,852	.21	.13	.34
United Kingdom [4]	485,235	474,130	540,694	6.44	7.08	7.73
Yugoslavia	6,932	3,190	5,167	.09	.04	.07
Total, Europe	1,344,218	1,244,952	1,420,365	17.85	18.61	20.29
Latin America:						
West Indies:						
Cuba	918,957	666,254	559,797	12.21	9.95	8.00
Dominican Republic	69,322	40,705	41,895	.92	.61	.60
Haiti	14,191	9,671	12,479	.19	.15	.17
Other West Indies	51,281	36,501	59,762	.68	.54	.86
Total, West Indies	1,053,751	753,131	673,933	14.00	11.25	9.63
Central America and Mexico:						
Costa Rica	22,166	13,286	24,726	.29	.19	.36
Guatemala	69,979	50,387	68,221	.93	.76	.97
Honduras and British Honduras	71,485	36,425	38,267	.95	.55	.54
Nicaragua	13,002	4,466	8,858	.17	.07	.13
Panama	28,459	26,688	36,815	.38	.40	.53
Salvador	20,466	17,164	11,204	.39	.25	.16
Mexico	682,536	479,465	357,927	9.07	7.17	5.11
Total, Central America and Mexico	917,093	627,881	546,021	12.18	9.39	7.80

See footnotes at end of table.

TABLE 3-3

(Continued)

Area and country	In thousands of dollars—			Percentage of grand total—		
	1929	1936	1940	1929	1936	1940
South America:						
Argentina	331,819	348,268	387,945	4.41	5.20	5.54
Bolivia	61,619	18,337	26,829	.82	.27	.39
Brazil	193,606	194,345	240,109	2.56	2.90	3.43
Chile	422,593	483,736	413,983	5.62	7.23	5.91
Colombia	123,994	107,519	111,616	1.65	1.62	1.60
Ecuador	11,777	4,941	5,107	.16	.07	.07
Guianas (British, French, and Surinam)	5,588	7,501	5,965	.08	.12	.09
Paraguay	12,615	5,077	5,037	.17	.07	.07
Peru	123,712	96,052	81,597	1.65	1.44	1.16
Uruguay	27,904	13,917	10,918	.37	.21	.16
Venezuela	232,538	186,266	262,376	3.08	2.78	3.74
Total, South America	1,547,805	1,465,989	1,551,482	20.57	21.91	22.16
Total, Latin America	3,518,739	2,847,001	2,771,436	46.75	42.55	39.59
Africa, Asia, and Oceania:						
Africa:						
British Africa	76,816	.....	.....	1.02	.....	.....
British South Africa	.....	55,127	72,901	.....	.82	1.04
Other British Africa	.....	(3)	5,014	.....	(3)	.07
Egypt	6,534	8,305	22,753	.09	.13	.33
Portuguese Africa	9,000	10,451	1,745	.12	.16	.03
Other Africa	9,819	18,811	28,660	.13	.28	.40
Total, Africa	102,229	92,694	131,073	1.36	1.39	1.87
Asia:						
Arabia, Bahrein Islands and Iran	1,092	17,780	57,324	.01	.27	.81
British Malaya, French Indochina, and Thailand	27,103	27,026	[4] 26,805	.36	.40	[4] .39
China	113,754	90,593	46,136	1.51	1.35	.66
India	32,676	29,680	48,775	.44	.45	.70
Iraq, Palestine, Syria, and Cyprus [7]	13,268	29,605	31,274	.17	.43	.44
Japan	60,700	46,694	37,671	.81	.70	.51
Netherlands Indies	66,012	69,739	71,275	.88	1.05	1.02
Philippine Islands	79,935	92,150	90,695	1.06	1.37	1.30
Turkey	8,505	13,706	11,990	.12	.21	.17
Total, Asia	403,045	416,993	421,945	5.36	6.23	6.03
Oceania:						
Australia	149,154	89,028	97,670	1.98	1.33	1.40
New Zealand	(8)	21,999	22,562	(8)	.33	.31
Total, Oceania	149,154	111,027	120,232	1.98	1.66	1.71
International	.....	26,100	32,597	.....	0.39	.47
Total, Africa, Asia, Oceania, and International	654,428	646,904	705,847	8.70	9.67	10.08
Grand total	7,527,735	6,690,498	7,000,342	100.00	100.00	100.00

[1] Included in Canada.
[2] Included in Germany.
[3] Includes Austria.
[4] Includes Gibraltar and Malta in 1929 and 1936; and in 1940 also Cyprus.
[5] Included in Other Africa.
[6] Includes New Caledonia.
[7] Excludes Cyprus in 1940.
[8] Included in Australia.

SOURCE: American Direct Investment in Foreign Countries, U.S. Department of Commerce, Bureau of Foreign and Domestic Commerce. U.S. Government Printing Office, 1930.

TABLE 3-3

(Continued)

Line	Area and country	Table 2										Table 3				
						1960 p						Net capital outflows				
													1960 p			
		1950	1957 r	1958 r	1959 r	Total	Mining and smelting	Petroleum	Manufacturing	Public utilities	Trade	Other	1959 r	Total	Mining and smelting	Petroleum	Manufacturing	Other
1	All areas, total	11,788	25,394	27,387	29,805	32,744	3,813	10,944	11,152	2,546	2,397	2,692	1,372	1,684	158	455	862	278
2	Canada [1]	3,579	8,769	9,470	10,310	11,198	1,329	2,667	4,827	645	630	1,100	417	471	202	138	31	99
3	Latin American Republics, total	4,445	7,434	7,751	8,098	8,365	1,155	2,882	1,610	1,131	718	870	218	95	−73	−7	125	50
4	Mexico, Central America and West Indies, total	1,458	2,254	2,355	2,516	2,630	245	306	530	386	272	661	81	69	26	24	22	−6
5	Cuba [2]	642	849	879	956	956	(*)	147	111	312	44	341	63					
6	Dominican Republic	104	96	93	87	86	(*)	(*)	(*)	6	2	80	1	(**)	(**)	(*)	(**)	(**)
7	Guatemala	106	106	116	122	131	(*)	26	(*)	66	5	34	14	−3	(**)	2	(*)	−4
8	Honduras	62	105	114	110	100	(*)	(*)	(*)	23	1	76	−4	−11	(**)	(*)	(**)	−11
9	Mexico	415	739	745	758	795	130	32	301	119	85	129	17	56	26	22	28	2
10	Panama	36	201	256	237	265	17	56	9	32	145	6	18	19		19	1	1
11	Other countries	100	158	140	146	145	13	22	11	37	10	50	4	4	1	1	1	1
12	South America, total	2,987	5,180	5,396	5,582	5,735	910	2,576	1,079	745	446	1,079	137	27	−99	−31	98	58
13	Argentina	346	333	330	366	472	(*)	(*)	213	(*)	21	238	30	(*)	(*)	(*)	24	47
14	Brazil	644	835	795	829	953	10	76	515	210	130	213	24	62	2	9	32	38
15	Chile	540	668	687	710	734	317	(*)	91	27	12	288	15	−10	10	(*)	(*)	−10
16	Colombia	193	394	363	401	424	(*)	233	92	28	44	26	11	15	(*)	7	11	2
17	Peru	145	383	409	428	446	251	79	35	19	42	20	18	7	9	5	2	2
18	Uruguay	45	57	51	45	47	(*)	(*)	20	(*)	4	23	2	(**)	(*)	(*)	(**)	(**)
19	Venezuela	963	2,465	2,656	2,640	2,560	(*)	1,995	180	72	165	147	−23	−150	(*)	−46	11	−101
20	Other countries	31	64	84	96	97	3	49	3	14	7	21	12	−1	(**)	−1	(*)	(*)
21	Western Hemisphere dependencies	131	618	696	768	884	178	382	21	49	64	192	48	54	13	31	(**)	10
22	Europe, total	1,733	4,151	4,573	5,223	6,445	49	1,726	3,797	45	736	291	484	962	(**)	273	607	81
23	Common Market, total	637	1,580	1,908	2,208	2,444	9	827	1,436	29	254	90	150	282	(**)	73	182	27
24	Belgium and Luxembourg	69	192	208	231	231		52	146	1	29	4	−3	10		(**)	6	4
25	France	217	464	548	640	741	9	233	403	10	78	21	31	53		2	43	8
26	Germany	304	581	668	798	1,006	(*)	248	838	2	85	232	78	153	(*)		132	7
27	Italy	63	252	290	315	364	(*)	160	110	1	28	65	21	55	(*)		20	13
28	Netherlands	84	191	207	245	253		143	80	15	38	8	13	31			18	5
29	Other Europe, total	1,096	2,471	2,666	3,116	4,001	40	899	2,361	17	482	201	304	680	(**)	200	425	54
30	Denmark	32	62	69	68	67		40	16	(**)	9	2	4	10			8	1
31	Norway	29	51	58	69	80	(*)	22	21	(**)	4	10	9	18	(*)		17	1
32	Spain	31	44	58	52	58	(**)	17	27	3	8	1	1	5	(*)		(**)	1
33	Sweden	58	109	107	125	116	(**)	64	18	(**)	29	5	22	−2		11	−12	1
34	Switzerland	25	69	82	164	254	(**)	−7	91	(**)	101	53	68	27		12	12	4
35	Turkey	16	63	54	44	63	(*)	55	2	(**)	1	4	1	10	(*)		(**)	1
36	United Kingdom	847	1,974	2,147	2,477	3,194	(**)	600	2,164	9	256	155	190	588		172	432	28
37	Other countries	63	119	127	143	162	24	73	22	3	33	5	9	12	(**)	4	3	6
38	Africa, total	287	664	746	833	925	247	407	118	5	53	94	39	81	14	62	−5	9
39	North Africa	56	106	121	145	195	2	172	7	4	6	4	22	51		49	(**)	1
40	East Africa	12	30	35	43	46	1	42	(**)		4	(**)	4	1	(**)			(**)
41	West Africa	42	147	183	228	250	128	80	1	1	9	24	23	43	18	19		5
42	Central and south Africa, total	177	381	407	416	394	119	114	110	1	34	16	(**) 12	−13	−4		−15	5
43	Rhodesia and Nyasaland	28	38	45	53	52	23	(*)	(*)		2	3	(**)	1	1		(*)	(**)
44	Union of South Africa	140	261	221	223	206	46	(*)	106	(**)	31	10	−11	−18	−4		−15	−7
45	Other countries	12	21	22	21	28	2	(*)	(*)	(**)	2	22	−1	4	2		(*)	2
46	Asia, total	1,001	2,019	2,178	2,237	2,315	24	1,453	286	103	137	110	2	−20	2	−57	14	20
47	Middle East	692	1,138	1,224	1,213	1,163	(**)	1,119	28	3	7	7	−3	−72	(**)	−76	3	2
48	Far East, total	309	881	954	1,024	1,152	24	336	259	99	130	103	5	52	2	20	12	18
49	India	38	113	120	134	150	(*)	(*)	51	2	12	93	3	13	(*)	(*)	4	9
50	Indonesia	58	169	195	163	178		(*)	11	(**)	1	2	−44	2		(**)	2	3
51	Japan	19	155	181	259	324		(*)	91	1	57	15	12	18		3	4	12
52	Philippine Republic	149	306	341	367	414	(*)	(*)	91	92	50	181	32	6		(**)	2	4
53	Other countries	46	108	116	131	147	(*)	(*)	16	3	40	58	10	13	(*)		1	12
54	Oceania, total	256	636	786	879	994	33	372	494	1	58	36	28	41	(**)	2	29	10
55	Australia	201	583	655	742	856	33	(*)	478	(*)	42	308	26	46	(**)		29	17
56	New Zealand	25	48	50	54	53		(*)	18	(*)	16	19	1	−5				−5
57	Other countries	30	66	81	83	85	(**)	(*)		(*)	(**)	83	1	(**)			(**)	(**)
58	International	356	1,041	1,188	1,357	1,418		851		567			135	12		12		(**)

r Revised. p Preliminary. *Combined in other industries. **Less than $500,000.

NOTE.—Detail may not add to totals because of rounding.

[1] The value for U.S. direct investments in Canada for 1957 and subsequent years has been raised by $132 million to include certain liabilities of Canadian financial institutions to U.S. sources previously omitted.

[2] The estimated value of U.S. direct investments in Cuba in 1960 is carried forward from 1959 without change. No estimates have been made for net capital flows, reinvestment of subsidiary earnings, net earnings, or income receipts for Cuba for 1960.

SOURCE: Survey of Current Business, August 1961, Vol. 41, No. 8, p. 22.

TABLE 3-3 (Continued)

Preliminary 1970 Data on U.S. Direct Investments Abroad, Selected Data Items, Countries, and Industries

[Millions of dollars]

Line	Area and country [1]	Total, all industries					Mining and smelting					Petroleum					Manufacturing					Other industries					Line
		Book value at year-end [2]	Net capital outflows	Reinvested earnings [3]	Earnings	Interest, dividends, and branch earnings	Book value at year-end [2]	Net capital outflows	Reinvested earnings [3]	Earnings	Interest, dividends, and branch earnings	Book value at year-end [2]	Net capital outflows	Reinvested earnings [3]	Earnings	Interest, dividends, and branch earnings	Book value at year-end [2]	Net capital outflows	Reinvested earnings [3]	Earnings	Interest, dividends, and branch earnings	Book value at year-end [2]	Net capital outflows	Reinvested earnings [3]	Earnings	Interest, dividends, and branch earnings	
1	All areas	78,090	4,483	2,885	6,715	6,825	6,127	370	113	748	649	21,790	1,492	468	2,860	2,660	32,221	1,530	1,471	2,124	1,650	17,952	1,090	833	1,712	976	1
2	Developed countries	53,111	3,221	2,059	4,629	3,737	3,687	231	111	411	227	11,716	1,068	232	369	369	29,767	1,206	1,512	2,734	1,610	10,960	720	600	1,115	641	2
3	Canada	22,861	818	781	1,622	973	2,016	166	87	294	201	4,869	363	170	316	166	10,866	321	336	649	384	4,927	153	394	361	226	3
4	Europe [4]	22,471	1,961	961	2,333	1,378	71	-8	4	5	.....	2,435	661	.....	-16	49	13,763	765	864	1,663	946	6,207	462	366	648	394	4
5	United Kingdom	8,015	662	236	892	375	1	(**)	(**)	(**)	(**)	1,852	304	-26	-12	49	4,966	196	225	662	333	1,176	161	37	161	102	5
6	European Economic Community	11,035	971	615	1,218	776	16	(**)	(**)	(**)	(**)	2,525	238	37	22	7	7,126	617	813	1,009	649	2,079	277	68	216	119	6
7	Belgium and Luxembourg	1,810	154	97	171	66	(*)					65	8	-1		-8	1,155	102	67	91	28	587	61	31	80	46	7
8	France	2,548	330	167	338	97	10					230	29	-4	6	1	1,867	218	121	187	71	791	83	50	45	17	8
9	Germany	4,979	247	66	623	313						1,196	167	24	8	25	2,913	12	26	451	153	869	128	8	42	35	9
10	Italy	1,211	101	6	56	95						401	41	-17	-10	-1	801	41	44	83	48	219	19	6	18	13	10
11	Netherlands	1,496	138	131	101	87						631	58	85	36	-26	700	82	80	84	81	364	-2	17	33	11	11
12	Other Western Europe	4,781	291	370	466	229	55	(**)	(**)	(**)	(**)	1,110	121	-11	-25	-7	1,865	121	130	190	62	2,003	30	165	221	172	12
13	Denmark	341	45	8	16	13	1					234	40	.....	-1	6	82	4	3	4	3	27	-1	6	13	7	13
14	Norway	588	38	10	6	-4						136	14	-1	-15	-15	68	.....	6	7	3	86	1	6	11	6	14
15	Spain	758	118	37	62	17						162	26	-6	-3	1	472	69	10	28	12	214	23	23	23	4	15
16	Sweden	615	26	19	55	10						123	17	.....	.....	.....	463	7	7	11	7	133	1	12	22	10	16
17	Switzerland	1,788	10	102	209	107	(*)	.....	.....	.....	.....	-27	-1	6	6	.....	1,265	26	67	83	37	1,265	-2	68	211	116	17
18	Other [5]	1,481	80	44	82	38	23	(**)	(**)	(**)	(**)	511	14	-12	-13	-1	638	26	45	87	11	227	10	19	39	26	18
19	Japan	1,491	132	119	218	84	.....	.....	.....	.....	.....	540	66	29	29	6	763	33	79	116	69	188	34	11	31	19	19
20	Australia, New Zealand, and South Africa	4,349	370	198	466	293	373	78	19	169	67	969	44	29	27	25	2,341	66	139	536	161	667	79	27	65	40	20
21	Australia	3,305	273	129	393	206	278	65	22	70	53	(**)	(**)	(**)	(**)	(**)	1,704	44	83	182	108	1,122	114	26	80	41	21
22	New Zealand	195	6	11	23	8	95	6	-1	10	5	172	1	(**)	(**)	(**)	98	2	5	15	6	77	-3	6	8	5	22
23	South Africa	849	91	62	151	78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	538	23	50	86	26	163	18	24	44	17	23
24	Developing countries	21,417	944	818	2,066	2,116	2,401	163	8	336	323	9,277	401	115	2,366	2,186	6,412	130	356	899	332	6,078	236	190	448	285	24
25	Latin American Republics and other Western Hemisphere	16,663	819	662	1,668	1,661	2,037	133	-26	260	291	2,929	154	66	410	246	4,664	186	290	699	376	4,115	166	153	293	168	25
26	Latin American Republics	12,261	307	319	1,236	890	1,364	86	-26	177	163	2,187	63	36	347	222	4,230	111	191	617	281	3,370	75	116	235	181	26
27	Mexico	1,776	87	46	133	93	151	16	-1	6	8	33	-6	2	4	.....	1,193	86	32	106	74	399	10	11	19	9	27
28	Panama	1,253	163	65	121	76	18	.....	.....	.....	.....	256	16	8	10	.....	111	-2	20	37	10	573	150	26	54	36	28
29	Other Central America [6]	674	23	3	21	21	10	2	.....	2	3	168	8	1	-4	.....	77	8	3	21	6	411	36	15	47	32	29
30	Argentina	1,268	68	10	168	82	(**)	(**)	(**)	(**)	(**)	121	1	20	35	11	1,217	53	70	150	64	310	15	3	16	13	30
31	Brazil	3,853	143	101	245	82	127	(**)	(**)	(**)	(**)	.....	.....	.....	.....	.....	86	-2	2	3	-2	726	-70	18	25	10	31
32	Chile	748	-58	-1	86	68	155	15	-22	20	61	(**)	(**)	(**)	(**)	(**)	729	-1	6	15	7	178	4	3	6	3	32
33	Colombia	893	-5	8	60	51	(**)	(**)	(**)	(**)	(**)	218	-9	(**)	15	10	88	-8	3	8	4	110	1	10	20	1	33
34	Peru	851	-60	73	82	60	426	-21	.....	56	54	(**)	-20	(**)	1	(**)	436	8	34	60	22	366	12	24	77	53	34
35	Venezuela	2,906	-9	66	422	350	(**)	(**)	(**)	(**)	(**)	1,734	54	-1	269	263	75	3	7	8	3	315	1	3	5	1	35
36	Other [7]	815	56	8	20	18	46	-3	-2	10	16	213	.....	.....	-8	-8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36
37	Other Western Hemisphere [8]	2,663	252	83	252	182	653	75	.....	103	106	762	81	27	69	34	284	-6	16	42	25	765	91	36	86	37	37
38	Other Africa [9]	2,612	319	186	784	662	349	-39	27	66	33	1,016	299	63	694	644	166	13	7	19	5	345	39	19	43	23	38
39	Liberia	203	-20	6	28	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	204	20	6	2	21	39
40	Libya	1,070	231	6	637	550	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,048	231	6	537	551	40
41	Other	1,406	66	65	119	31	287	-18	27	54	20	922	65	57	43	6	98	12	7	18	3	87	7	9	12	4	41
42	Middle East [10]	1,645	-134	-28	1,178	1,296	5	.....	.....	.....	.....	1,466	-132	-29	1,161	1,196	86	8	5	6	2	90	-4	-1	10	11	42
43	Other Asia and Pacific	2,477	218	83	329	226	61	36	(*)	-8	-1	1,066	140	37	130	86	652	1	37	86	46	698	35	10	105	83	43
44	India	305	12	-2	24	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	157	9	5	22	15	148	3	-7	12	15	44
45	Philippines	710	-32	1	30	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	287	-18	13	26	12	423	-15	-12	18	26	45
46	Other	1,481	233	84	267	161	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	347	18	19	37	23	1,104	223	73	210	170	46
47	International, unallocated	3,863	226	251	416	174	.....	.....	.....	.....	.....	1,647	-31	117	276	166	.....	.....	.....	.....	.....	1,996	256	134	141	10	47

*Less than ($500,000). **Combined in other industries.

1. The value of investments in specified industries and countries is affected by capital flows among banks, as indicated in table 4.
2. Represents U.S. owners' share in the reinvested earnings of foreign corporations.
3. Does not mean that all countries grouped in an "other" or regional category have U.S. direct investment at any given time.
4. Direct investment statistics do not show any investments in Eastern Europe.
5. Includes Austria, Cyprus, Finland, Gibraltar, Greece, Greenland, Iceland, Ireland, Malta, Portugal, Turkey, and Yugoslavia.
6. Includes Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua.
7. Includes Haiti, Dominican Republic, Ecuador, Haiti, Paraguay, and Uruguay.
8. Includes all of the Western Hemisphere except Canada and the 19 Latin American Republics included in line 26.
9. Includes United Arab Republic (Egypt) and all other countries in Africa except South Africa.
10. Includes Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Qatar, Saudi Arabia, Southern Yemen, Syria, Trucial States, Oman, and Yemen.

NOTE.—For an explanation of the relation between earnings, reinvested earnings, and interest, dividends, and branch earnings see the technical appendix.

SOURCE: Survey of Current Business, Vol. 51, October 1971.

TABLE 3-3 (Continued)

U.S. DIRECT INVESTMENT POSITION ABROAD, YEAR END 1980

	All industries	Mining	Petroleum	Manufacturing								Trade	Banking	Finance (except banking), insurance, and real estate	Other industries
				Total	Food and kindred products	Chemicals and allied products	Primary and fabricated metals	Machinery, except electrical	Electric and electronic equipment	Transportation equipment	Other manufacturing				
All countries	213,468	5,433	46,329	89,863	8,283	19,844	6,298	15,997	7,383	12,343	19,796	25,752	7,193	27,212	10,836
Developed countries	157,884	4,487	34,173	71,390	6,351	14,582	4,646	14,413	6,453	10,341	15,613	20,848	3,726	16,712	6,039
Canada	44,640	2,997	10,573	18,802	1,878	3,382	1,639	1,864	1,293	3,483	5,266	2,809	(D)	6,136	(D)
Europe	93,686	37	19,924	45,425	3,790	9,865	2,532	10,887	3,897	6,052	8,981	14,040	3,146	9,668	3,446
European Communities (9)	76,588	(D)	18,904	41,478	3,396	8,928	2,416	10,130	3,245	5,693	7,868	6,957	2,442	6,370	(D)
Belgium	6,287	(D)	743	3,307	122	1,305	149	329	602	(D)	(D)	1,362	271	522	(D)
Denmark	1,280	0	696	221	64	(D)	(D)	1	(D)	(D)	(D)	285	32	(D)	(D)
France	9,348	(D)	1,789	5,931	308	1,049	247	2,386	249	827	1,066	1,289	240	240	(D)
Germany	15,393	(*)	3,479	9,827	789	1,484	588	2,511	857	2,035	1,422	1,859	707	351	120
Ireland	2,229	(*)	(D)	1,819	167	820	51	179	51	(*)	611	29	(D)	(D)	(D)
Italy	3,396	0	1,237	3,335	139	711	198	999	600	111	808	435	238	39	111
Luxembourg	848	0	(D)	242	1	(D)	(D)	33	(D)	3	115	-11	(D)	(D)	1
Netherlands	7,948	0	2,893	3,099	456	1,181	235	656	129	(D)	(D)	560	91	691	614
United Kingdom	28,059	(D)	6,292	14,047	1,407	2,317	846	3,022	673	(D)	(D)	1,950	664	4,030	(D)
Other Europe	19,098	(D)	3,020	3,949	394	787	116	557	652	570	1,094	7,083	704	3,297	(D)
Austria	471	0	(D)	124	9	14	(D)	(D)	(D)	(*)	7	153	-2	(D)	5
Greece	347	2	70	148	(D)	77	(D)	(*)	(D)	0	(D)	83	32	13	2
Norway	1,686	(D)	1,370	141	(*)	15	6	3	(D)	0	(D)	77	0	(D)	52
Portugal	255	0	22	99	(D)	31	(D)	-1	4	(D)	23	(D)	0	-1	(D)
Spain	2,665	-17	183	1,724	288	630	(D)	(D)	134	(D)	(D)	512	(D)	66	(D)
Sweden	1,498	0	(D)	578	38	78	55	306	(D)	(D)	(D)	202	0	(D)	(D)
Switzerland	11,278	0	286	946	(D)	(D)	7	124	157	0	(D)	5,782	316	2,918	524
Turkey	207	(D)	182	36	(D)	(D)	0	3	(D)	0	(D)	(D)	(*)	(D)	(D)
Other	891	0	78	150	0	(D)	(*)	(D)	(D)	(D)	(D)	230	(D)	(D)	23
Japan	6,274	0	1,566	2,900	186	666	82	1,144	208	269	425	1,130	(D)	191	(D)
Australia, New Zealand, and South Africa	10,484	1,453	2,110	4,182	520	809	393	718	254	527	960	1,478	189	718	354
Australia	7,584	1,292	1,224	2,909	327	518	298	522	167	447	630	1,041	166	662	290
New Zealand	579	3	(D)	198	31	49	5	11	16	(D)	(D)	(D)	(D)	16	3
South Africa	2,321	158	(D)	1,075	162	242	90	185	72	(D)	(D)	(D)	(D)	40	61
Developing countries	52,684	2,866	(D)	17,664	1,932	4,462	1,652	1,684	1,849	2,982	4,183	5,204	3,466	10,500	(D)
Latin America	36,275	1,408	6,336	14,489	1,675	3,566	1,378	1,358	1,023	1,862	3,599	3,830	2,505	9,709	1,998
South America	15,801	959	2,165	6,867	986	2,099	639	986	538	1,116	2,271	1,420	660	1,048	884
Argentina	2,448	(D)	269	1,548	170	615	71	124	44	449	315	213	129	16	(D)
Brazil	7,548	142	353	5,133	630	1,039	442	836	368	651	1,367	556	339	813	208
Chile	308	7	70	(D)	(D)	23	13	1	(D)	(D)	(D)	64	29	4	(D)
Colombia	981	(D)	217	547	78	184	17	8	46	(D)	(D)	97	12	13	(D)
Ecuador	323	0	156	114	27	17	(D)	0	19	2	(D)	33	(D)	-1	(D)
Peru	1,666	(D)	(D)	(D)	7	32	(D)	1	13	(D)	27	56	5	4	20
Venezuela	1,897	(*)	39	1,035	220	344	53	(D)	38	(D)	369	366	(D)	156	(D)
Other	855	1	(D)	307	(D)	15	(D)	(D)	(D)	(D)	(D)	21	59	31	(D)
Central America	10,163	138	868	5,157	564	1,233	(D)	381	461	746	(D)	1,286	210	1,548	856
Mexico	3,940	98	146	4,501	370	1,055	310	291	425	742	1,016	719	(D)	157	(D)
Panama	3,190	(*)	568	260	(D)	151	0	(*)	1	0	(D)	581	(D)	1,375	(D)
Other	1,033	39	154	417	(D)	128	(D)	(*)	34	4	(D)	85	(D)	17	(D)
Other Western Hemisphere	12,311	312	1,304	444	183	182	(D)	(*)	22	(*)	(D)	1,024	1,655	7,115	456
Bahamas	2,701	(D)	284	60	(D)	(D)	0	0	2	0	(*)	250	1,338	625	(D)
Bermuda	10,674	0	-203	15	(*)	12	0	(*)	(*)	0	3	(D)	(D)	10,313	(D)
Netherlands Antilles	-4,072	(D)	(D)	(D)	-1	(D)	0	0	2	0	(D)	18	(D)	-4,534	34
Trinidad and Tobago	562	0	(D)	(D)	(D)	(D)	(*)	0	3	0	(D)	7	(D)	3	47
Other	1,847	292	138	(D)	155	(D)	(D)	0	16	(*)	(D)	(D)	(D)	711	(D)
Other Africa	2,730	465	2,210	425	(*)	36	140	7	50	(D)	(D)	108	130	117	227
Saharan	1,795	0	1,594	67	11	5	2	(D)	2		(D)	23	56	4	54
Egypt	1,079	0	913	(D)	1	2	0	0	(*)	0	(D)	(D)	56	2	(D)
Libya	577	0	553	15	0	0	0	(D)	0	0	(D)	2	0	0	7
Other	191	0	128	(D)	10	3	2	(D)	2	0	(D)	(D)	(*)	3	(D)
Sub-Saharan	1,933	465	616	358	-11	90	137	(D)	48	(D)	(D)	83	74	113	224
Liberia	278	(D)	(D)	(*)	0	(*)	(D)	0	0	0	0	(D)	(D)	(D)	110
Nigeria	27	0	-182	71	(D)	80	(D)	(*)	(*)	0	12	13	38	(D)	(D)
Other	1,628	(D)	(D)	288	(D)	60	(D)	(D)	48	(D)	(D)	(D)	(D)	(D)	(D)
Middle East	2,281	(D)	(D)	237	21	39	10	21	80	15	51	226	175	109	(D)
Israel	329	0	(D)	184	10	23	5	(D)	17	2	(D)	(D)	13	(D)	14
OPEC	1,891	(D)	(D)	70	10	11	2	(D)	(*)	(D)	(D)	115	117	(D)	(D)
Other	31	0	(D)	3	1	(*)	3	(D)	(*)	(D)	(D)	(D)	45	17	(D)
Other Asia and Pacific	8,397	(D)	2,771	2,513	235	741	126	188	696	(D)	(D)	1,030	658	565	(D)
Hong Kong	1,989	0	198	330	(D)	96	(D)	(D)	33	(*)	(D)	524	210	377	330
India	298	0	(D)	256	(D)	137	23	(D)	33	7	(D)	10	13	(D)	(D)
Indonesia	1,334	(D)	982	140	7	29	(D)	1	(D)	(*)	(D)	20	9	6	(D)
Malaysia	818	3	(D)	164	4	27	5	5	99	2	22	(D)	7	3	23
Philippines	1,244	(*)	334	331	137	149	(D)	4	91	8	(D)	87	117	29	144
Singapore	1,198	0	456	391	8	16	20	38	238	49	20	156	90	36	69
South Korea	367	0	(D)	190	31	92	3	(D)	30	(D)	(D)	(D)	80	(D)	9
Taiwan	310	0	36	233	15	100	(*)	(D)	130	36	(D)	65	83	4	1
Thailand	360	10	(D)	87	13	30	(D)	0	20	(*)	(D)	(D)	39	1	5
Other	182	(D)	20	58	(D)	49	0	(*)	(D)	0	(D)	19	27	(D)	(D)
International	3,701		(D)												(D)
Memorandum—OPEC	6,268	187	(D)	1,448	(D)	456	83	(D)	(D)	(D)	(D)	578	232	(D)	(D)

*Less than $500,000(±).
D Suppressed to avoid disclosure of data of individual companies.

SOURCE: Survey of Current Business, August 1981, Vol. 61, No. 8.

Intra-company Transfer Pricing

A popular method used by MNCs to underprice exports or overprice imports is called intra-company transfer pricing or, simply, "transfer pricing." If the corporate tax for an exporting subsidiary is higher than the corporate tax for an importing subsidiary, the exporting subsidiary underprices its commodity in order to pay less overall corporate tax to both the exporting and importing countries.

Empirical research in six Latin American countries indicates that almost 75 percent of MNCs' transactions have taken place within subsidiaries of the same parents and those transactions have involved underpricing, ranging from 40 to 50 percent lower than the prices received by the local firms. Overpricing imports is used for the same purpose as underpricing exports, especially if the parent company desires to transfer extra-legal funds from one subsidiary to another. The overpricing in Latin America ranges from 30 to 700 percent (Muller, 108). According to Vaitsos (158), transfer pricing in the pharmaceutical, rubber, chemical, and electrical industries in Colombia was drastically high. In order to lower the profit margin, the reported imported prices for some products in Colombia were ten times higher than the quotation in the U.S. In another study on 257 foreign manufacturing firms in Latin American countries, Muller and Morgenstern (109) found that wholly owned subsidiaries underprice their exports to other affiliates in Latin American countries in relation to non-affiliate firms in those countries.

The possibilities for manipulating transaction prices are much greater for multinational oil companies than for manufacturing industries, because multinational oil enterprises are more vertically integrated.

Therefore, there are more intrafirm transactions among oil companies. In recent decades, oil producing countries have been able to reduce the loss of their oil revenue as the result of transfer pricing by using the posted price of oil as a basis for calculation of income taxes. By contrast, the oil consuming countries have not yet been able to execute an enforceable policy to restrict transfer pricing by multinational oil companies. Jenkins and Wright (77) found that the reported rate of return for U.S. foreign petroleum investment in consuming countries (Canada, Europe, Japan, Australia, New Zealand, and South Africa) was very low compared to the return on U.S. petroleum investment in producing countries (Venezuela, Africa, and Middle East). At the same time, investment in consuming countries was expanding at a higher rate than investment in producing countries. The same report concludes that the U.S. petroleum corporations were able to pay less corporate income tax to the consuming countries than the U.S. manufacturing companies in these same countries.

> In 1966 the U.S. petroleum industry would have paid an additional 255 million dollars in income taxes to the consuming countries if the income generated by petroleum assets had been taxed in each country at the same rate as U.S. manufacturing affiliates. In 1970 the additional tax liability would have been in excess of 325 million dollars (Jenkins and Wright, 77, pp. 8-9).

It is not clear whether the home or host country benefits from transfer pricing. If multinational corporations establish their headquarters or financial subsidiaries in "tax haven" nations (the Bahamas, Panama, Leichtenstein or Luxembourg), where financial regulations are limited, the countries that benefit more are usually the tax haven countries. Through tax havens or "triangular trade" MNCs pay less tax to both parent and host countries. For example, if a U.S. or an European

MNC wants to export goods to Colombia, they first invoice the goods (underpriced) to Panama and their subsidiaries in Panama reinvoice the goods (normally priced or overpriced) to Colombia.

Two solutions to the problem of transfer pricing have been recommended:

1) The first is to impose taxes and tariffs on a lump sum rather than on an ad valorem basis, the objective being to eliminate the incentive to manipulate prices by separating taxes and tariff payments from prices. The U.S. House of Representatives, in 1962, considered this method and proposed tying tax payment to the geographical dispersement of multinational sales, assets or capital. For example, if three-fourths of the assets of a multinational company is outside of the U.S., the U.S. income tax of that company should be based on one-fourth of the global income of that company.

2) The second is "arm's length standard" or a checking system to monitor the prices on every intrafirm transaction. Under Section 482 of the U.S. Internal Revenue Code, any intrafirm transfer price which does not conform with the arm's length standard can be challenged by law. However, in reality intrafirm transactions are too complex and ambiguous to be controlled. Bergsten, Horst, and Moran (19, p. 491) suggest that the enforcement of the arm's length by all countries is the only solution to the problem of transfer pricing, and also that multinational enterprises must be forced by all nations to disclose the details of their financial data and activities to the public, to facilitate enforcement of this policy.

There are two methods to check the intrafirm transactions prices:

A) The reported prices should not be less than the average variable cost.

B) The ceiling prices should not be significantly lower than average price of similar products and services. However, both of these methods present problems. The major problems with the first method are that, in general, the fixed cost has not been considered in this method; allocation of costs between the parent company and its affiliates is generally unclear; and there is no simple way to measure the variable cost for a company producing many products. In the second method, besides the problem of measuring the average variable cost for some products, finding a similar product to use as a basis for measurement presents many difficulties.

Foreign Direct Investment and Diffusion of Technology in LDCs

Beyond any doubt, diffusion of "appropriate" and "sufficient" technology is a major determinant of economic growth and development. Many economists argue that multinational corporations, which possess the most sophisticated technologies in the free world do not transfer adequate and appropriate technology to less developed nations. With the exception of oil producing countries, LDCs are characterized by high unemployment and little capital. Therefore, labor-intensive technology --rather than capital intensive technology--must be transferred to third world nations if they are to utilize their most plentiful resource--labor.

Another problem with transmitting technology to less developed countries through direct investment is the "insufficiency" of transferred capital. Most economic development theories--balanced or unbalanced growth--refer to capital as the most important factor for initiating sustained growth and development in underdeveloped countries. However, foreign capital transferred to LDCs is not enough to carry out development projects.

Despite the encouragement since 1955 of the U.S. government for investment by multinational enterprises in less developed countries, in 1970 U.S. foreign direct investment in developed countries was two and a half times that of investment in less developed nations. Dr. Adler (2, p. 204) states that expansion of the U.S. private direct investment has been in developed countries such as Canada and Europe, not in underdeveloped countries. Dr. Kamark (2, p. 204) believes that the recent setback in the expansion of U.S. direct investment in less developed countries may be due in part to a slower rate of growth in the demand in advanced nations for primary products than for income. And Wilkins (168) presents a general view on the "insufficiency" and inappropriateness of the flow of foreign investment to third world countries relative to developed nations. His view can be summarized as follows: 1) LDCs are generally poor, or, in the language of business enterprise, their market size is small. 2) Political instability in LDCs creates the likelihood of nationalization and expropriation of foreign properties, as happened in Cuba, Venezuela and other LDCs. 3) Currency depreciation, a common phenomenon in LDCs, reduces the dollar value of the U.S. companies' gain in those countries. 4) Existence of a strong anti-American

feeling in the third world countries, which is usually transformed into violence and results in damages to the U.S. enterprises' property. 5) Nationalization for the sake of economic and political independence by LDC governments is usually self-defeating and creates constraints on the operation of multinational corporations. 6) The fear of take-over of the essential industries by foreign companies present in LDCs creates problems for foreign investors (some LDC governments believe that domination of key industries by foreign firms leads to a continuous economic and political dependency). 7) Government participation in the economic development (especially public ownership) of the basic industries in LDCs creates obstacles for foreign operation in these industries.

A Comparative Analysis of Foreign Direct Investment in Australia, France, and Mexico

In 1974, the Business International Corporation (BIC) began a study on the role of foreign investment in host countries[1] (24). This study compares the performance of foreign owned companies with the performance of local companies and the effect of foreign investment on the overall economy of the host nations, for the 1957-1973 period. BIC's study concentrated on the performance of MNCs in three countries--Australia, France, and Mexico--each representing a different level of industrial development. However, the results obtained for these

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[1]The Business International finding is based on: 1) the U.S. official census of foreign corporate investment for the years 1957 and 1966, and 2) the sample of U.S.-owned and European-owned companies taken by BIC. BIC's questionnaire was sent to a large number of American and European companies requesting information on their complete operations in ten developed and developing countries, but lack of sufficient and appropriate response compelled BIC to limit its research to France, Australia, and Mexico.

countries--although they answer many questions concerning the role of MNCs in host countries--do not provide a sufficient basis for extrapolating generalizations about all MNCs in all host countries. Some of the findings of the BIC are as follows.

During the 1957-1966 period, the value added of the U.S. owned affiliates in all three countries grew faster than the GDP for those countries. The average growth of value added for manufacturing affiliates was substantially higher than the GDP in total. The percentage growth for France was more than 100 percent; that of Australia was 66 percent; and that of Mexico was 38 percent. The export of U.S. affiliates for the 1957-1966 period increased by 205 percent, 835 percent, and 390 percent in Australia, France, and Mexico, respectively, while during the same period, the overall growth of export for these three countries was 24 percent, 187 percent, and 60 percent, respectively. These figures indicate the outperformance of foreign corporations relative to the local enterprises. Also, the performance of the MNCs in France was significantly greater than MNC performance in Australia and Mexico.

During the 1966-1973 period, MNC export increased by 295 percent, 297 percent, and 508 percent, for Australia, France, and Mexico, respectively. The respective import figures were 110 percent, 227 percent, and 89 percent. Foreign direct investment in France is market oriented, with a high concentration of manufacturing industries while Australia and Mexico are considered to be resource oriented: Export of primary products and raw materials is the major focus of foreign investors in Mexico. The import of semi-manufactured and finished goods in Mexico is substantially higher than that in the other two countries,

which, again, points out the differences in the stages of industrial development of the three countries.

During 1973, the amount of Research and Development (R&D) relative to total income was 1 percent for Australia, 0.6 percent for France, and 0.3 percent for Mexico. These figures are still very high relative to average figures for MNCs' R&D in host countries.

The average cost per employee in U.S. dollars for 1966 and 1973 were as follows:

TABLE 3-4

THE AVERAGE COST PER EMPLOYEE IN U.S. DOLLARS IN AUSTRALIA, FRANCE, AND MEXICO

	1966	1973	% Change
Australia	3,961	8,688	119
France	4,936	12,267	149
Mexico	4,078	6,828	68

SOURCE: Business International Corporation, The Effect of Foreign Investment on Selected Host Countries (New York: Business International Corporation, July 1979), p. 12.

The average cost per employee in Australia and Mexico was lower than in France. Therefore, the supposed advantages of using cheap labor in less developed countries are not reflected in the above figures. However, the changes in cost per employee in France and Mexico reveal the fact that the presence of MNCs in host countries widens the gap between the standard of living of the employees in developed and less

developed countries. The BIC report indicates that the number of employees in Australia and Mexico grew almost four times as fast as in France, but that salaries increased much more slowly in the former than the latter.

Changes in the total assets of the MNCs in host countries may be used as a criterion for measuring profitability and political and economic stability. Over the 1966-1973 period, France's total assets increased 189 percent, Australia's total assets increased 79 percent, and Mexico's total assets increased 59 percent.

Net fixed assets per employee can be regarded as representative of factor intensity: the greater the change in this ratio the greater will be the change in capital intensity. This ratio rose (116%) in France and (13.1%) in Australia, and fell (5.7%) in Mexico during the 1966-1973 period. This certainly reflects a trend toward labor-intensive investment in Mexico and towards a capital-intensive technology in France. The tendency toward a more labor-intensive technology in Mexico than in France can be explained by the existence of cheaper labor and less restrictive labor union policies in Mexico.

Another criterion for judging the economic and political stability of the host countries is the change in long-term debt of the multinational corporations. Foreign investors may have a long horizon for their investment and carry long-run projects in countries where the economy is healthy and the political system is stable. The following figures show the changes in the long-term debt for France and Mexico for the 1966-1973 period.

TABLE 3-5

PERCENTAGE CHANGES IN LIABILITIES OF FOREIGN-OWNED COMPANIES IN AUSTRALIA, FRANCE, AND MEXICO 1966-1973

	France %	Mexico %
Long-term Debt	228.1	8.0
To local banks	345.4	4.6
To parent and affiliates	195.0	40.7
To other foreigners	188.6	63.2

SOURCE: Derived from Business International Corporation, The Effect of Foreign Investment on Selected Host Countries (New York: Business International Corporation, July 1979), p. 15.

It is generally believed that a country can receive economic benefits through the inflow of foreign direct investment. However, there may be trade-off between the possible economic contributions of foreign direct investment and the influences on political independence. Thus, quite often joint ventures are recommended by many economists as a way for the host country to reduce the possible loss of political and national dependency and still enjoy the likely economic benefits of foreign direct investment. The BIC study found that for some activities in some countries joint ventures were more beneficial to the economy of the host countries than wholly-owned foreign companies, but, in the balance, wholly-owned companies outperformed the joint ventures.

The BIC study compares the performance of foreign owned companies with that of locally owned companies. Some of the major results of this comparision are as follows:

1) U.S. owned companies increase exports faster.

TABLE 3-6

INCREASE IN EXPORTS OF FOREIGN-OWNED COMPANIES

IN AUSTRALIA, FRANCE, AND MEXICO

1966 AND 1973

	Australia %	France %	Mexico %
Increase of Exports of BIC Samples Over 1966-1973 Period	295	297	508
Increase of Total Export	128	187	89

SOURCE: Derived from Business International Corporation, The Effect of Foreign Investment on Selected Host Countries (New York: Business International Corporation, July 1979), Table 104, p. 8.

Among the three countries, U.S.-owned companies in Mexico had the highest rate of increase in exports relative to the export of local companies.

2) U.S.-owned companies pay higher wages.

In 1973 the wage differential was 66 percent for France and 100 percent for Mexico (no comparison is available for Australia).

3) U.S.-owned companies create more jobs than the local companies. During the 1966-1973 period, the number of jobs created by

foreign companies in Australia increased 5.6 percent, as compared to a 1.2 percent increase by the local companies. This rate was 6 percent against 7.4 percent for Mexico and 1.64 percent against 0.74 percent for France.

4) U.S.-owned companies make higher profits than locally owned companies.

TABLE 3-7

NET PROFIT AFTER TAX AS A PERCENTAGE OF TOTAL INCOME FOR AUSTRALIA, FRANCE, AND MEXICO IN 1966 AND 1973

	1966 %	1973 %
Australia		
Foreign-owned companies	3.9	4.8
Locally-owned companies	n.a.	n.a.
France		
Foreign-owned companies	2.7	3.3
Locally-owned companies	1.2	1.5
Mexico		
Foreign-owned companies	4.1	6.0
Locally-owned companies	7.6	8.1

SOURCE: Reproduced from Business International Corporation, The Effect of Foreign Investment on Selected Host Countries (New York: Business International Corporation, July 1979), p. 25.

The reported profit/income ratio of foreign-owned companies is higher than the one for locally-owned companies in France, but not in Mexico. The higher profit/income ratio for Mexico's locally-owned

companies relative to foreign-owned companies was due to the lower income of the locally-owned companies. The foreign-owned reported profit alone is higher than the one for locally owned companies for all three countries.

TABLE 3-8

GROWTH OF PROFITS AND COMPANY TAXES PAID

	Australia 1966-1973		France 1966-1973		Mexico 1966-1973	
	Foreign Owned Firms (%)	Locally Owned Firms (%)	Foreign Owned Firms (%)	Locally Owned Firms (%)	Foreign Owned Firms (%)	Locally Owned Firms (%)
Net Profit Before Taxes	184.0	132.0	217.0	102.0	204.0	121.0
Company Taxes Paid	236.0	153.0	207.0	91.0	225.0	121.0
Net Profit After Taxes	174.0	118.0	223.0	115.0	190.0	121.0

SOURCE: Derived from Business International Corporation, The Effect of Foreign Investment on Selected Host Countries (New York: Business International Corporation, July 1979), Table 1-12, p. 26.

U. S.-owned companies constitute only a small portion of the host country's economy. The following figures indicate the U.S.-owned companies' production relative to the host countries' GDP (see Table 3-9).

The figures indicate an increase in the rate of growth of foreign direct investment relative to the host countries' GDP. The share of foreign investment still remains less than 6 percent of the GDP of

TABLE 3-9

U.S. OWNED COMPANIES' PRODUCTION IN AUSTRALIA, FRANCE, AND MEXICO RELATIVE TO THE GDP OF THESE COUNTRIES

U.S. Owned Production Relative to GDP Year	Australia (%)	France (%)	Mexico (%)
1957	4.3	1.2	4.1
1966	5.8	2.7	4.2

SOURCE: Derived from Business International Corporation, The Effect of Foreign Investment on Selected Host Countries (New York: Business International Corporation, July 1979), p. 3.

the host countries in 1966; therefore, the growth of the foreign sector does not reflect the growth of the overall economy of a host nation.

MNCs' Experience in Yugoslavia

Before WWII, foreign companies controlled over 50 percent of the non-farm industries in Yugoslavia. Consequently, Yugoslavia enjoyed the highest rate of industrial growth in the world. Domination of multinational companies in Yugoslavia began after WWI; multinational oil companies in Yugoslavia are considered here. After a few years of competition, Standard Oil of the U.S. and Shell Oil of Britain formed a cartel with the two firms in Yugoslavia, despite the anti-cartel law. This cartel was extremely successful; by the end of the 1920s it was able to control almost 100 percent of output and trade of oil products. The oil

cartel was able to eliminate or absorb local competition. By the end of the 1920s the oil companies in the cartel had repatriated all of their initial investments and 20 to 50 percent more to their home countries (Kafka, 84, p. 234). Bribery stopped government protest against illegal operations by cartel members. Soon after WWII, all foreign entrepreneurs left the country, and the artificial economic growth caused by cartel actions dropped substantially (Kafka, 84, pp. 211-239). Kafka's position was influenced by the failure of foreign direct investment to help Yugoslavia. His paper on policy implications of foreign direct investment concludes that "The import of equity capital is neither desirable nor necessary" (Kafka, 84, p. 234).

It can be concluded that diffusion of technology through foreign direct investment is effective if it generates operations in new fields and induces the expansion of existing local enterprises through backward and forward linkage effects, but not if it displaces the existing local enterprises.

Host Countries' Responses to MNCs

Host-nation response to MNC domination has varied from country to country according to time and the nature of the dominant industry. In some cases, host nations have been able to reduce the rate of MNCs' expansion if not stop their activities.

This part of this study examines the response of developed as well as underdeveloped countries. Section one reviews the responses of developed nations giving special consideration to England, France, and Germany. Since the role of multinational oil companies in the European Economic Community is a major concern of the empirical part of this

study, section two examines the gradual increase in Europe's dependency on oil as a major source of energy, and section three explores European countries' restrictive policies against the multinational oil companies. Section four presents a brief examination of the experiences of multinational oil companies in a few less developed countries. Section five examines the recent responses of oil producing countries to multinational corporations.

Multinational Corporations and Developed Countries

This section examines the reactions of a few developed European countries to the inflow of capital by multinational corporations. After WWII, the attitudes of European countries toward foreign investors changed substantially, compared to their pre-war attitudes. The flow of American technology and investment into Europe as part of the post war recovery program paved the way for future U.S. multinational companies. U.S. enterprises were initially welcomed, especially during the recovery period, but later they faced many restrictions and regulations, which, of course, varied from country to country. Belgium was entirely in favor of foreign investment. Italy wanted to attract investment in southern Italy and therefore, offered tax exemptions and other concessions to companies that contributed to the development of southern Italy. Germany and Britain placed limited restrictions on the multinationals; France applied a more complex policy toward foreign investors than other European countries.

Investment in England

The United Kingdom, like most other European countries, was seriously concerned about keeping key industries under the control of British companies; consequently, England applied more restrictive policies against foreign take-over of these industries than of the less important industries. The most effective tool against foreign take-over applied by the United Kingdom was the "Exchange Control Regulations,"[1] which derived from the Exchange Control Act passed in 1947. This Act gives the treasury substantial power to ensure that foreign investment is financed by foreign capital (which increases foreign exchange reserves), rather than by the local market. This regulatory power protects the national interest of the United Kingdom by preventing domination of United Kingdom industries by foreign investors. The national objectives described above and a continuous policy of strengthening the balance of payment was the top priority in Parliamentary debate during several cases where a foreign company tried to buy the local industries.[2]

Replacement of the Conservative Party (1952-1965) by the Labor Party (1965-1969) strengthened the position of the government against foreign investors by imposing more limitations on the activities of those investors. Both the Conservative Party and the Labor Party approved of foreign direct investment or the acquisition of local industry by foreign

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[1]For detailed discussion of this policy, refer to Fritz Machlup, W. S. Salant, and L. Tarshis, International Mobility and Movement of Capital, National Bureau of Economic Research (New York: Columbia University Press, 1972), pp. 399-403.

[2]Some of these cases are: The Texas Oil Company's purchase of Trinidad Oil Company (1956), the American Ford Company's purchase of the minority equity in British Ford held by residents of the United Kingdom (1960) and the case of Chrysler Corporation and British Rootes Motors.

investors when: first, it resulted in improved balance-of-payments; second, the fear existed that foreign investment might be transferred to other European competitors; and, third, protection of British investment in foreign countries from retaliatory restrictive policies was necessary.

Other legislative acts in favor of national monopoly and against foreign mergers and take-overs were the Monopolies and Mergers Act of 1965 and the Industrial Reorganization Corporation Act of 1966. Under the 1965 act, the take-over of the Pressed Steel Company by British Motors Corporation was approved to prevent a take-over by foreign firms.

Another labor-government effort to protect local industries was the establishment of the Industrial Reorganization Corporation (IRC), whose goal was to avoid further take-overs by strengthening the structure of domestic industry through the creation of larger and more efficient British-owned industries.[1]

The problems encountered by U.S. enterprise in Britain resulted not only from the government restrictive regulations but also from the British labor union, which made its own regulatory demands on the U.S. companies. For example, the American Textile had to close down the Robert-Arundel textile machinery plant after one year of resistance staged by Britain's most reactionary trade union--the Amalgamated Engineering Union (87, p. 80).

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[1]Priority for IRC assistance was given to large and productive industries vital to national interest, such as the automotive and petroleum industries.

Investment in France

Despite several bilateral and multilateral treaties[1] between France and other developed countries which were intended to facilitate the freedom of capital movement, France did impose restrictions upon foreign investors to control their activities within the French economy.

From the end of WWII to 1962, the French policy toward foreign investment was moderate; control over foreign investment was accomplished through the "Exchange Control Regulation." However, early in 1962 the situation in France became difficult, because of the intense anti-foreign sentiment of the French economy. Two main events caused the French government to become more hostile toward foreign investors. First, a union representing industrialists throughout the European Common Market complained that American entrepreneurs were bidding up the price of input and lowering the price of output. Since the American oligopolistic firms had access to cheaper sources of industries' inputs (capital, energy, and other raw materials) the rise in input prices and fall in end-product prices prevented European firms from successfully competing with the American companies. Second, the American layoff of French employees in two American-owned plants, the GM-Frigidaire plant and Remington Rand plant, led to serious criticism of American companies.

These events resulted in more restriction policies against the U.S. multinational companies and the substitution of domestic products

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[1] Some of those treaties are the Treaty between France and the United States ensuring the right of establishment to each other's national (1959); the Code for Liberalization of Capital Movements of the Organization for Economic Cooperation and Development (1960); and Article 52, 58, and 64 of the Treaty of Rome (1958).

or products imported from other EEC members for the products that were being manufactured by U.S. firms.

In his New Year's message for 1965, President De Gaulle warned European countries of being "colonized by foreign participations, inventions, and capabilities," (Kindleberger, 87, p. 78). Pressure on the legislature authority resulted in passage of legislation under which foreign firms were required to get permission to operate in France. The opposition to approval of foreign capital inflow was expressed in excessive screenings of applications, delay in processing applications, and rejections.

France's first concern was to keep "key industries" under French control. However, since the electronics industry (including the computer industry) was considered a key industry, and since it required a level of technology unavailable to France, the government had to change its policy on "key industries" in order to accommodate the trade-off between political and economic independency and the necessary acquisition of new technology. During the late 1960s France was forced to moderate its policies toward foreign investors on a selective basis.

French resistance to foreign direct investment was based in part on infant industry argument, national prestige and political nationalism, and national and local concern about the ineffectiveness of fiscal and monetary policies because of interference from U.S. multinational corporations.

The period 1965 to 1970 was a transition period, during which protection of local industries was ensured by the government. The aim of this policy was to distinguish between foreign take-overs of French

industries and foreign investment which increased local productive capacity and helped to develop the technology vital to the French economy. With time, France intended to restrict the former but encourage the latter. In any case, the French government was cautious about the balance of payments and aware of the fact that foreign investors might shift their investments to other European countries.

In summary, the French policy on foreign investment was selective, restricting foreign take-over of key industries and endorsing foreign investment in a way to strengthen its balance of payments. Policy makers were always cautious of the fact that the advantage of investment might be lost to France if too many restrictions were placed on foreign investors.

Investment in Germany

The German policy toward foreign capital movement was liberal relative to the policies of France and Britain. German law did not explicitly restrict foreign investment except by the oil industry. The German government was very concerned that domestic firms kept control of this important industry.

Another complaint of the Germans against foreign direct investment was on a macrolevel, rather than directed at special industries. Germany accused American investors of causing inflation by bidding up prices of raw material, labor, plants and equipment. Since the German economy was in a state of equilibrium with full employment, any transfer process of foreign direct investment generated inflation in the economy.

One reason that Germany chose an open market strategy with regard to foreign investment may have been that German industries were

compatible in the world economy. Therefore, no reason existed to restrict foreign industries or to fear foreign take-over of local industries.

Table 3-10 indicates U.S. direct foreign investment in Europe, EEC(6), Germany and U.K. U.S. direct investment in Britain was considerable. The U.K., with 47 percent of all American investment in Europe in 1958 and 35 percent in 1968, dominates the European market. Table 3-10 also is helpful in analyzing the quantitative transfer of capital from the U.S. to EEC(6), Germany and France.

The Gradual Growth in European Dependency on Oil as a Major Source of Energy

Before WWII, Europe relied heavily on coal as its main source of energy. During the war many coal mines around Europe were badly damaged or destroyed. Therefore, when the reconstruction of Europe began after the war, the demand was high for alternative sources of energy. The best immediate solution to the problem was importing Middle Eastern oil which was controlled mostly by American companies. The post-war emphasis by European governments on expansion of refineries in Europe encouraged a rapid growth in Europe's demand for oil. Despite this demand, in 1955, coal was still considered the dominant source of energy. By the late 1950s and during the 1960s European consumption of coal changed drastically. Table 3-11 indicates that coal, which provided 75 percent of the energy used by European countries in 1955, provided only 23 percent of the energy used in 1972: petroleum represented 22 percent of European energy consumption in 1955, and 60 percent in 1972. Most important, in 1955, 22 percent of the energy needed was imported

TABLE 3-10

A. AMERICAN DIRECT INVESTMENT ABROAD, INCLUDING NET CAPITAL OUTFLOW AND UNDISTRIBUTED EARNINGS OF SUBSIDIARIES

	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
						(millions of dollars)					
Europe	428	750	1,325	1,057	1,161	1,443	1,776	1,867	2,244	1,749	1,437
EEC	219	283	436	406	566	733	907	854	1,243	893	526
France	76	77	101	104	157	204	191	184	143	142	−1
Germany	81	130	209	168	290	279	294	317	631	420	285
U.K.	172	330	749	318	261	343	373	559	576	434	583
						(percentages)					
France as a % of EEC	35	27	23	26	28	28	21	22	12	16	0
Germany as a % of EEC	37	46	48	41	51	38	32	37	51	47	54
U.K. as a % of EEC	79	117	172	78	46	47	41	65	46	49	111
U.K. as a % of Europe	40	44	57	30	22	24	21	30	26	25	41
EEC as a % of Europe	51	38	33	38	49	51	51	46	55	51	37

SOURCE: *Survey of Current Business*, September, 1967; October, 1968; and October, 1969.

Reproduced from: Fritz Machlup, W. S. Salant, and L. Tarshis, International Mobility and Movement of Capital, National Bureau of Economic Research (New York: Columbia University Press, 1972).

TABLE 3-10 (Continued)

B. BOOK VALUE OF AMERICAN DIRECT INVESTMENTS ABROAD

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968[a]
							(millions of dollars)					
Europe	4,151	4,573	5,323	6,681	7,713	8,930	10,340	12,109	13,985	16,209	17,882	19,386
EEC	1,680	1,908	2,208	2,644	3,087	3,722	4,480	5,426	6,304	7,584	8,405	8,992
France	464	546	640	741	857	1,030	1,240	1,446	1,609	1,758	1,904	1,910
Germany	581	666	796	1,006	1,177	1,476	1,780	2,082	2,431	3,077	3,487	3,774
U.K.	1,974	2,147	2,477	3,231	3,542	3,824	4,172	4,547	5,123	5,657	6,101	6,703
							(percentages)					
France as a % of EEC	28	29	29	28	28	28	28	27	26	23	23	21
Germany as a % of EEC	35	35	36	38	38	40	40	38	39	41	42	42
U.K. as a % of EEC	118	113	112	122	115	103	93	84	81	75	73	75
U.K. as a % of Europe	48	47	47	48	45	43	40	38	37	35	34	35
EEC as a % of Europe	40	42	41	40	40	42	43	45	45	47	47	46

SOURCE: *Survey of Current Business*, September, 1966; September, 1965, p. 24; August, 1964, p. 10; August, 1963, p. 18; September, 1958; August, 1957, 1961, 1962, and 1959; September, 1960.

[a] Preliminary data.

Reproduced from: Fritz Machlup, W. S. Salant, and L. Tarshis, International Mobility and Movement of Capital, National Bureau of Economic Research (New York: Columbia University Press, 1972).

TABLE 3-11

PRIMARY SOURCES OF ENERGY IN WESTERN EUROPE,

1955 AND 1972

	1955 (%)	1972 (%)
Use:		
Coal	75	23
Petroleum	22	60
Natural Gas	1	9
Other	2	8
Produced in Europe	78	35
Imported from non-Europe, Net	22	65

SOURCE: Raymond Vernon, The Oil Crisis, (Eds.) W. W. Norton and Company, Inc., New York, 1976, p. 92.

from other countries, while by 1972 foreign imports accounted for 65 percent of the total European consumption. The European Economic Community and Britain both faced this problem. The data on Tables 3-12 and 3-13 present the primary sources of energy and the domestic share of production for the European Economic Community (6) and for Britain in 1972. Among the alternative sources of energy, petroleum was the most important and, at the same time, the least domestically supplied item.

From WWII to the mid-1950s, Western Europe governments continued to subsidize the coal industry to meet energy demands. By 1958, the demand for coal was decreasing, and the policy of the Western European countries was to protect the coal industry by maintaining a certain

TABLE 3-12

PRIMARY SOURCES OF ENERGY IN SELECTED EUROPEAN COUNTRIES, 1973

(In Percent)

Country	Petroleum	Natural Gas	Coal	Others
Belgium-Luxembourg	62.1	13.8	23.7	0.4
France	72.5	8.1	16.1	3.2
Germany	58.6	10.1	30.1	1.3
Great Britain	52.1	13.2	33.6	1.2
Italy	78.6	10.0	8.1	3.2
Netherlands	54.2	42.3	3.4	0.1

*Including nuclear, hydroelectric, and geothermic energy

Source: British Petroleum. *Statistical Review of the World Oil Industry, 1973*

Reproduced from: Raymond Vernon, The Oil Crisis, (Eds.) W. W. Norton and Company, Inc., New York, 1976, p. 95.

TABLE 3-13

DOMESTIC PRODUCTION AS PROPORTION OF DOMESTIC CONSUMPTION, BY ENERGY SOURCES, SELECTED EUROPEAN COUNTRIES, 1972

Country	Coal	Petro-leum	Natural Gas	Hydro-elect.	Nuclear	TOTAL
Belgium	65	—	—	2	—	16
Denmark	—	—	—	—	—	—
France	69	1	54	30	9	23
Germany	115	7	64	5	3	50
Great Britain	98	2	97	2	11	51
Italy	5	1	93	33	3	15
Luxembourg	—	—	—	42	—	2
Netherlands	63	6	171	—	1	70

Source: OECD, *Long-Term Energy Assessment, Preliminary Draft Report*, Paris, September 11, 1974

Reproduced from: Raymond Vernon, The Oil Crisis, (Eds.) W. W. Norton and Company, Inc., New York, 1976, p. 95.

level of production through subsidy provided by the imposition of tax on oil.

After the formation of the European Economic Community, an overall European energy policy was proposed, but disagreement between those members who had vast coal reserves and were obligated to protect the coal industry and those members who had little or no coal reserves prevented such a policy from being formed. The energy policy remained an unresolved problem in European economic integration.

The 1973 oil crisis caused European countries to look for other sources of energy besides oil. The British had already found a potential source of natural gas in the North Sea, and by 1975 Britain produced the energy equivalent of nearly 40 million tons of oil a year in the form of North Sea gas. Other western European countries expanded their local production of gas or increased imports of gas from the massive fields of Algeria, Libya, and the U.S.S.R. via pipeline or liquefied natural gas tankers.

The oil crisis of 1973 and a sharp increase in price of imported oil provided the opportunity to return to the prewar main source of energy--coal--and to promote intensive expansion of this industry.

European Restrictions and Regulations on Foreign Oil Companies

U.S. oil companies were confronted with many restrictions and regulations from European governments and European multinational oil companies, ranging from import quotas, exchange restrictions, price fixing regulations, new taxation, and restriction on repatriation of profit to compulsory participation in national cartels.

The ultimate goal for each European country was to achieve "self-sufficiency." The first means to obtain this goal was the promotion of exploration for new oil by oil companies; consequently, U.S. oil companies started searching for new oil in Austria, Denmark, France, Britain, Italy and other European countries. The second method was to save oil by searching for alternative sources of energy. A third policy was the imposition of strong pressure by the European governments on the multinational oil companies to build refineries in their countries. The implementation of this policy did not rely on the old methods of imposing tariffs on oil refineries but instead new strategies were chosen such as restricting foreign exchange, requiring licenses for importing refined oil, and establishing refineries and government participation in refineries. And, finally, many European countries tried to establish their own cartel and to force the U.S. oil companies, directly or indirectly, to aid the national cartels. Until 1934, the Italian government used tariffs to encourage refineries at home, but, in 1934, the Italian government gave special privileges to those oil companies that had refineries and forced others to establish one. Socony-Vacuum went along with government wishes and built a refinery, but Jersey Standard, which did not expand its refinery, had to reduce its activity substantially.

In Germany, where regulation had been less than in other European countries, the oil companies were suddenly ordered in 1934 to keep large oil reserves in storage. Also, currency convertability in Germany was gradually reduced until converting marks into other currencies was totally blocked.

Less Developed Countries' Responses to MNCs, Special Case: A Few Latin American Countries' Responses to Multinational Oil Companies

According to Wilkins (168, p. 225), during the 1930s, animosity against multinational companies in general and the oil companies in particular was very prevalent in Latin America. People in the street or in political authority believed that their vast natural oil reserves were being exploited by American enterprise, leaving little or nothing for the host nations. Verbal criticism soon translated into action, which, in many cases, threatened the interest of oil companies. A few examples are described below.

In Chile, the government took complete control over oil production and distribution away from the U.S. companies, as the result of a law passed in 1932.

The Brazilian government passed a law in 1938 that put a refining company wholly owned by Jersey Standard out of business.

In Uruguay, a law passed in 1931 gave exclusive authority to the Uruguayan government to import crude oil and refined petroleum products; the Americans were later forced to cooperate under the law.

In Argentina, the government gained control in 1935, for the first time, over exploration for and import of refined oil, which put the American oil companies in an extremely difficult position.

In 1937, for the first time in Latin America, the Bolivian government confiscated the property of oil companies and accused them of commiting "fraud" and "smuggling" oil out of the country.

The oil companies' problems in Mexico were not less than in other Latin American countries. In 1936, the Mexican Petroleum Workers

Union, backed by the government, obtained substantial concession from the oil companies. In 1937, the official Mexican commission accused the oil companies of (Wilkins, 168, p. 226)

1) having "earned enormous profits in the exploitation of the subsoil . . . .
2) "Influencing" national as well as international political events.
3) paying lower "real wages" than those earned by the workers in other industries.
4) charging higher prices for oil in Mexico than they charged for oil they exported (in order to pay less taxes).
5) making higher profits in Mexico than in the United States.

The commission suggested new policies for improving the living conditions of the Mexican workers in the oil industry and proposed that other concessions be granted to the government by oil enterprises. The dispute between the union and the companies was taken to the Mexican Supreme Court, which voted against the companies. Rejection of the Supreme Court decision by the oil companies led to a strong speech by the Mexican President against the oil companies;[1] consequently, the government expropriated most of the foreign oil companies in 1938.

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[1]In his speech, the Mexican President, Lázaro Cárdenas, addressed some of the current social and economic problems of Mexico, but the question of who should be blamed for those problems is political. In his speech he asked:

> In how many of the villages bordering on the oil fields is there a hospital, or school, or social center or a sanitary water supply or an athletic field, or even an electric plant . . . ? Who is not aware of the irritating discrimination governing construction of the camps? Comfort for the foreign personnel; misery, drabness, and insalubriety for the Mexicans. Refrigeration and protection against tropical insects for the former; indifference and neglect, medical service and supplies always grudgingly provided for the later; lower wages and harder, more exhausting labor for our people . . . . (Wilkins, 168, pp. 227-228)

Oil Producing Countries and Multinational Oil Companies

The most effective action taken by oil producing countries against the multinational oil companies was the formation in 1960 of the Organization of Petroleum Exporting Countries, which aimed to stabilize the oil prices.

In 1969, the government of Algeria nationalized the oil industry, but this did not draw a serious response from the oil companies or the State Department, apparently because, at the time, another company was negotiating over import of natural gas from Algeria to the United States. Following the events in Algeria, the new Libyan government, after long negotiation with the oil companies during which it asked for higher prices and more concessions to the government, expropriated the property of major oil companies. During 1972 and 1973 the U.S. and British governments tried to block the sale of Libyan oil but they failed to do so because of the shortage of oil in the market and because of purchases by the Soviet Union, Bulgaria, Rumania, the Brazilian State Oil Company, and the Italian State Oil Company.

During the 1960s, the oil companies were victimized by the anti-American and anti-British feeling in the Middle EAst. After the Arab-Israel War, American and British pipelines and other properties were continuously attacked and sabotaged. Many pipelines were damaged and destroyed in Saudi Arabia, Kuwait, and Iraq.

By 1970, Middle Eastern oil supplies, which were considered as a major source of energy for the United States and other industrial countries, created new negotiating power for the oil producing countries.

Therefore, in 1972 when companies were asked to "participate" in equity ownership of the existing oil-producing ventures by the Middle Eastern oil producing countries, companies had no choice but to accept the request. In December of 1972, the oil companies agreed to a 25 percent ownership of Saudi Arabia, Qatar and Abu Dhabi, which could be raised to 50 percent by 1982.

Continuation of U.S. support for Israel during the 1973 war caused, at first, a substantial increase in the price of oil and then, the OPEC oil embargo. The OPEC oil embargo created a drastic oil shortage in the world oil market, and the immediate consequences of the embargo were 1) another large increase in the price of oil; 2) a substantial amount of money for the oil producers; 3) a potential windfall profit for the oil companies; 4) a drastic deficit on the balance of payments of industrial countries, especially the European countries.

CHAPTER IV

THEORIES OF FOREIGN DIRECT INVESTMENT

The purpose of this chapter is to present an overview of previously developed theories of foreign direct investment and a mathematical model developed by this author. The first section provides a general introduction to the questions and areas to be covered in the remaining sections of the chapter. In the second section a micro-economic approach to the theory of foreign direct investment is introduced which includes the "Business Administration," "Industrial Organization," and "Product Cycle" approaches. In section 3, a macro-economic approach to the problem of foreign investment is presented. This approach includes: the Hecksher-Ohlin theorem, Mundell's substitutability theorem, the MacDougall-Kemp theorem, the author's alternative model, Batra and Ramachandra's model, and finally Batra's model for less developed countries. Section 4 is an overview of trade barriers and optimum tariff and taxation policies.

Introduction

The emergence of foreign direct investment (capital mobility) into international trade theory has been demonstrated by several authors including Batra (12, 13, 15), Batra and Seth (16), Gehrels (52), Caves (26, 27), Jones (81), Kemp (86), MacDougall (101) and Horst (65, 66) among many others.

The multinational firm transfers capital, technology and managers know-how through direct foreign investment from a country in which they are abundant (home country) to a country in which they are scarce (host country).

The flow of direct investment conducted by multinational enterprise gives rise to several interesting questions concerning: (1) the logical interpretation of the growth of the firm, which leads to investment by a firm in countries other than the home country; (2) the welfare effect of such an investment on each individual trade partner and on the world as a whole: and (3) the effect of the restrictions imposed on foreign direct investment by home and/or host country from the efficiency or pareto optimality point of view.

There is controversy among different international trade economists concerning the real cause of the international expansion of a firm. First, there are economists who believe foreign direct investment occurs mostly in industries that are oligopolistically structured. This is the "Industrial Organization Approach" and is adhered to by Hymer (72), Caves (71), Vernon (161) and Knickerbocker (90). Second, there are those who address foreign direct investment as the natural consequence of the growth of the firm. This is termed the "Business Administration Approach" and is supported by Fayerweather (44), Robinson (126) and Penrose (118). Third, some economists assume the three-stage theory of innovation--growth, maturing of the firm, and expansion of research and development (R&D)--to be the central cause for international capital movement. This has been labeled the "Product Cycle Approach." Vernon (159), Hafbauer (69), and a number of others sponsor this view.

Finally, there are others who have introduced the foreign direct investment into the standard H-O trade model and expanded the model in a way to include different aspects of the theory of foreign direct investment. This group includes Mundell (110), Nadel (111), Rakowski (123), Batra (14), MacDougall (101), Jones (81), Kemp (85), and others.

The effect of foreign direct investment on the level of employment, terms of trade, balance of payments and the overall social welfare of the home and host countries has been analyzed by economists in both international trade and economic development.

The transfer of capital-intensive technology to a less developed labor-rich country may be regarded as inappropriate by the host country, since emergence of capital-intensive technology substitutes capital for labor and results in substantial loss of jobs. Many employed people, therefore, join the masses of unemployed while the few capital owners benefit. On the other hand, emergence of multinational investment in a fairly developed country may be considered suitable for both the host and investing countries.

The degree of transfer of research and development to a host country depends on factors such as the negotiation power of the host government or private trade partners, the degree of monopolistic or oligopolistic strength of the investing firm relative to the domestic competitors, the stage of development of the host country, and its political stability among other factors.

The question of welfare and efficiency cannot be explored unless there is clear knowledge of the distribution of the benefits between home and host country as well as among the interested groups

within each country. MNCs with superior knowledge and higher levels of technology and marketing skill relative to domestic producers are economically more efficient, but if such gain of efficiency is reinvested in foreign countries and not repatriated to the home country, then in short run home country would suffer a net loss. This loss would be equivalent to the actual outflow of direct investment and the cost embodied in the transferred knowledge plus other possible side effects. Repatriation of MNCs' gain to the home country may reduce the social welfare of the host country.[1] In addition any change in distribution of profits between labor and capital within each individual country may increase the level of well-being of one group at the expense of the others.

Foreign direct investment is considered as a loss to the balance of payments of the home country in the short-run and of the host country in the long-run, assuming that profits earned by MNCs are returned to the home country. The initial outflow of capital reduces the balance of payment position of the home country but future returns on the outflow improve the balance of payments of the home country at the expense of the host country.

A long-run deficit or serious problems with the balance of payments may force both creditors and the debtors to impose mandatory control over the flow of foreign investment. The U.S. initiated a Voluntary Credit Restraint program in February 1965, in an attempt to improve

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[1]The conditions under which the social welfare of a host country diminishes will be explored later.

its balance of payments position. This program was made mandatory in January 1968.[1]

The host country may impose policies to restrict the repatriation of multinational's profit through inducement measures such as tax exemptions or compulsory control of foreign exchange.

A Micro-Economic Approach to the Theory of Foreign Direct Investment

Business Administration Approach

In the business administration approach it is assumed that foreign direct investment is the natural consequence of the growth of a firm. As a firm gains strength in its domestic market, it tries to expand its activities in foreign countries by first exporting commodities, by establishing an independent international business section, by forming new subsidiaries and finally, by controlling subsidiaries all over the world.

In this approach what is most emphasized is the type of management which best administers the problems confronting a firm in international business activities. The business administration strategy is a guideline to international management rather than a theory of foreign direct investment. It gives positive guidance to international managers for analysis of their individual strategies in marketing, production, technology, finance, investment, etc.; problems concerning their relations and responsibilities with one another and, finally, problems related to the political, economic and socio-cultural systems of the host country.

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[1]The effectiveness of the U.S. Voluntary and Mandatory Control Program are tested in the empirical part of this study.

Industrial Organization Approach

The second approach explaining MNCs' growth is the Industrial Organization Approach. In Stephen Hymer's view (72) a policy of direct foreign investment is rooted in the nature of oligopolistic firms that are superior to other firms. Hymer focuses on "giantism," "performance" and the natural counteraction of U.S. multinational corporations against the threat posed by other international institutions and multinational corporations such as the European and Japanese multinational corporations. "Giantism" is a characteristic of the U.S. multinational corporations. This phenomenon is illustrated by the 500 largest corporations reported in Fortune magazine. In 1967, U.S. industrial production accounted for half of the industrial production of Organization for Economic Cooperation and Development (OECD) and, in the same year, the sale of the top ten U.S. corporations was two and a half times that of non-U.S. corporations. In Hymer's view, the large size of U.S. corporations, along with their huge home market, gives them a unique opportunity to capture a substantial portion of the European market. Their large size also provides them with greater financial facilities in the international market. This financial advantage of big corporations over smaller corporations has been reduced to some extent because of expansion of international banks and other financial institutions in recent decades.

Horst (65) believes that company size is the only important determinant of multinational production by U.S. firms, as is shown in the following statement:

> The conclusion I have come to after an exhaustive examination of data is that once interindustry differences are worked out, the only influence of any separate significance is firm size. That is to say, once industry and size are taken into account, there are no consistent differences among the multinational firms, the Canadian investors, and the total sample of 1,191 manufacturing firms in the extent of vertical integration, labor or capital intensity, advantage or research effort, product diversity, or any other characteristics I could observe (Horst, 65, p. 261).

Hymer, contrary to Horst, considers "performance," beside giantism, to be an important determinant of multinational production. He observed that during one decade after formation of EEC (1957-1967), the U.S. industrial corporation was challenged rather than was challenging. In fact, from 1957 to 1962, U.S. corporations had a lower growth rate than other corporations.

A firm's growth is not necessarily a positive function of firm size, as is found by Rowthorn's (129, p. 40) empirical research. He concluded that growth of a firm is not an increasing function of size; big firms did not grow faster than small firms. On the contrary, during 1962-1967, firms that were small by international standard grew faster than giants.

The last point made in Hymer's analysis of the oligopolistic organization and its foreign direct investment policy concerns the threat posed by its rivals--European and Japanese multinational corporations. Foreign direct investment takes place to maintain status quo strategy or to combat the future threat of other MNCs. Generally speaking, industrial organizations are very well suited for the game theory. For each strategy taken by an individual firm, a counter strategy by other firms can be expected. Therefore, the question is not who is challenging whom, but as Hymer (73, p. 194) says, ". . . a firm can be

challenging and challenged at the same time, just as a military strategy can be both offensive and defensive." Experimental work by Knickerbocker (90) on gamesmanship suggests that the oligopoly's strategy is to block the possibility of one rival gaining significant advantage over the others. Assuming the oligopolistic organization of the international market, if a firm fails to choose an appropriate strategy at the appropriate time, it will be eliminated from the market or become a follower of a dominant firm. On a broader scale, if a country is incapable of creating a countervailing power against the expansion and penetration of global enterprise, that country will be colonized, not only in the economic sphere but also in the political, social and cultural spheres.

According to Richard Caves (26) foreign direct investment is made by multinational firms for different purposes: first, a firm may produce abroad in the same line of production as at home. This is called "horizontal" investment. "Horizontal" investment is usually made by an oligopoly with product differentiation. Second, an industry may invest abroad to provide raw material and primary products for production at home. This kind of direct investment (made by an oligopoly, but not necessarily differentiated) is called "vertical" investment. Finally, an oligopolist may invest because of a combination of the two factors above. In all cases, the domestic market is the key factor in the initiation and expansion of direct investment abroad. The huge U.S. market has given U.S. entrepreneurs a unique opportunity to use the domestic market as a laboratory for testing their products, allowing them to expand their production in foreign countries with greater

confidence. In the case of horizontal foreign investment, the product must have some character of public goods, meaning that the marginal cost of knowledge embodied in that product must be very low or non-existent. Also, the product must be known and preferable to other products present in the host country. Low cost patented inventions and superior knowledge or some other advantages are necessary conditions for a foreign firm to offset the market information available to the domestic rivals. The two most important requirements for horizontal extension of products are: 1) product differentiation and 2) transferability of knowledge. Products that are differentiated by brand name, style, package, form and size give greater rent-yielding to the producers and are harder to imitate. Advertising, research and development and marketing skills are undoubtedly helpful in making a product successful in a new market. Product differentiation alone does not produce a successful market abroad. For example, if managerial skill is the key for extension of a good or service abroad, product differentiation will not affect the foreign direct investment, therefore the transfer of knowledge about how to serve a market may be an essential factor in rent-yielding in the foreign market. Sometimes, the cost of securing the knowledge about a special product is high or can easily be transmitted to the competitor. In such cases, licensing, which fully captures the expected rent generated through transferred knowledge is recommended.

Expansion of the industrial sector also requires development of primary products. Consequently, foreign direct investment in the search for raw materials is essential for an oligopolist firm, not only

to secure input requirements for the production process, but also--according to Caves--to avoid uncertainty about the oligopolistic structure of the primary and secondary market and to bar the entry of new rivals. Caves believes that foreign direct investment may not happen in the primary sector if that sector operates under perfectly competitive conditions. When a few large firms control the production and distribution of a vital input to the industry, there is uncertainty about the price and supply of that product. A vertical integration of the two stages of production reduces much of the uncertainty.

Product Cycle Approach

Vernon's product cycle theory (159) relies on the three-stage theory of innovation, growth, and maturing of a new product and the research and development (R&D) factor theory. He does not emphasize the comparative cost theory, especially when he talks about the uniqueness of the United States market. To him, other forces, external economies, make the U.S. a plausible location for the production of special commodities. The uniqueness of the U.S. market lies in two factors: 1) U.S. customers enjoy a higher level of income than European customers; 2) the average unit labor cost in the United States is above the average unit cost in almost all other markets. The high cost of labor encourages new technology and innovation that allows for substitution of capital for labor, and new products sell well in the U.S. market because of the high standard of living. Therefore, the external economy unique to the U.S. market is so powerful that it overcomes factor cost and transportation cost in the choice of the location of industry.

Early stage of the product

At the early stage of production, producers confront many problems. The new products may not be standardized; product diversification dominates the market, rivals may enter the market easily, and the price elasticity of the demand may be low because of monopoly at early stage or product differentiation; therefore, choice of industry location is very flexible and cannot be decided only on the basis of factor cost analysis.

The maturing product

Expansion of demand for a product increases the degree of standardization for that product, and the need for flexibility of location declines. Increase in demand will also provide the advantage of economies of scale which makes the consumer less concerned about the production cost and more concerned about the quality and characteristic of the product. The U.S. capital intensive products may find market in countries with high levels of income such as western Europe. Once the market expands in foreign countries, the producer may decide to open a new subsidiary in that country, if the marginal cost plus the transportation cost in the host country is less than that of the home country (assuming zero cost for uncertainty and other risks attached to production in the host nation).

Theoretically, upon the establishment of new facilities in a foreign country by a U.S. firm and full utilization of economies of scale, the only difference that may remain between the U.S. and host nations is the labor cost. If that labor cost is sufficiently low to

offset the transportation cost, that product might be exported to the U.S. But comparison on the basis of factor cost alone is not sufficient for deciding to establish a new subsidiary in foreign land or to export the commodity to the home country. The problem is a complex one; social, political and governmental restrictions by both countries involved may affect the decision. Another point worth mentioning here is the threat of rival competition. Once investment is made by a firm in a foreign country, other firms will follow in fear of losing their share of the market or of upsetting the status quo.

The standardized product

The last stage in the product cycle theory is when a product is fairly well standardized and involves very low degree of uncertainty. Investors at this stage are looking for the lowest cost source of supply, such as the low cost of labor in less developed countries. A firm will be attracted by low wages if the production process requires a significant amount of labor and if the product has a high price elasticity of demand. Industries which rely heavily on external economies, skilled labor, R & D, and complex technology will remain close to developed areas with an industrial environment. Products with standard specifications produced in less developed countries might be exported to the United States if cost of input is so low that it offsets the transportation and other related costs. In Vernon's view, export of a relatively capital intensive product from a less developed country to the United States is contrary to the basic principle of Hecksher-Ohlin theorem, but explains the Leontief paradox. Figure 4-1 provides more insight into the three stages of product cycle theory.

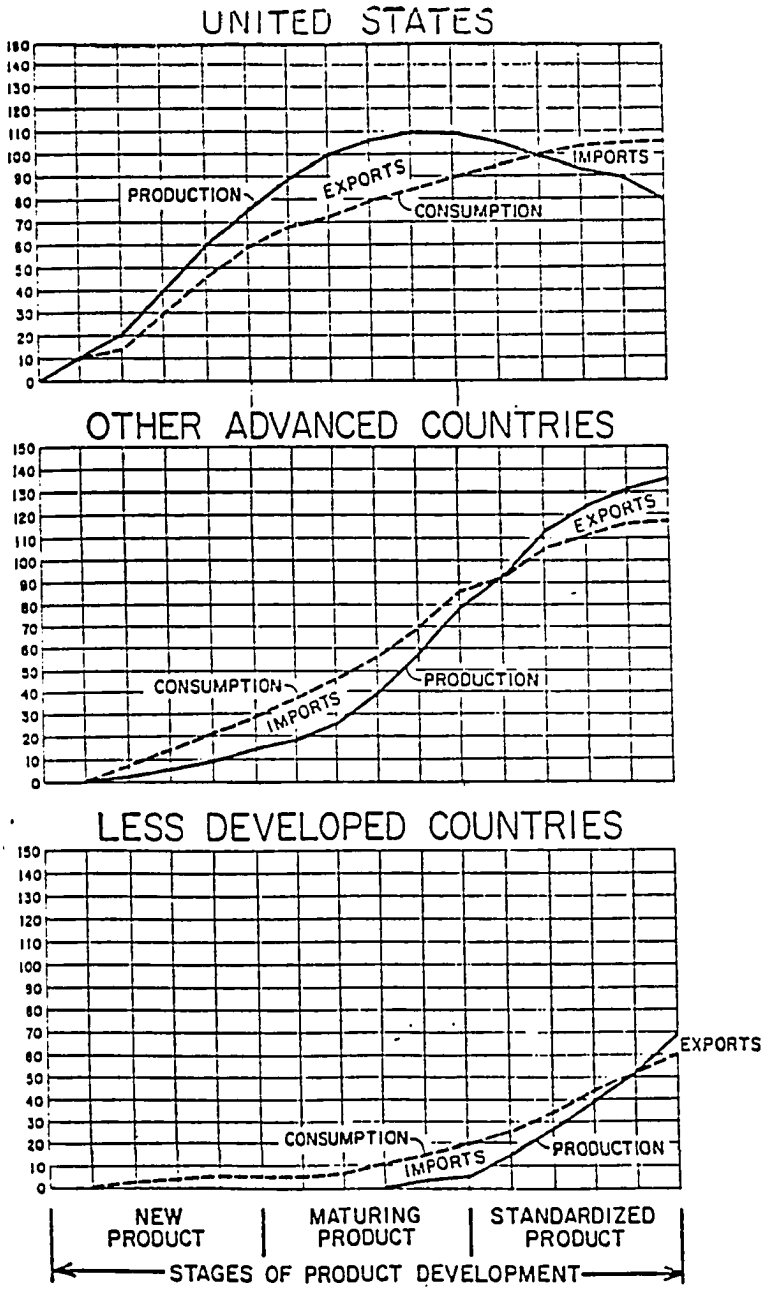

FIGURE 4-1

STAGES OF PRODUCT DEVELOPMENT

SOURCE: Raymond Vernon, "International Investment and International Trade in the Product Cycle," Quarterly Journal of Economics, 30, May 1966, p. 199.

A Macro-Economic Approach to the Problem of Foreign Direct Investment

The Hecksher-Ohlin Theorem and Capital Mobility

Consider two countries A and B producing two commodities cotton (X) and steel (Y) using only two factors of productions capital (K) and labor (L) in autarkic equilibrium. The pattern of the trade between the two countries can be predicted by the Hecksher-Ohlin theorem (H-O) if certain characteristics of the autarkic equilibrium is assumed to be known; H-O states that a country exports those commodities that intensively use the country's relatively abundant factors and imports those goods that intensively use its scarce factor under very rigid assumptions as follows: 1) both countries produce the same two commodities, using the same two factors and using a process defined by the same production function.

$$X = X\ (K,\ L) \qquad\qquad Y = Y\ (K,\ L)$$

2) Both factors are indispensible in production functions which are characterized by being homogeneous, convex and constant return to scale.

$$X\ (0,\ L) = X\ (K,\ 0) = 0$$

$$\lambda X = X(\lambda K,\ \lambda L)\ \lambda > 0$$

3) Factor intensities are non-reversible.

4) Prefect competition exists in all markets, as does full employment of resources.

5) No transportation cost, tariff or other trade barriers exist.

6) The relative endowment of the two factors vary from country (A) to country (B).

7) Consumers' preferences are identical in both countries.

8) Factors are perfectly mobile between the sectors within the countries immobile across the countries.

Mundell's Substitutability Theorem

H-O theorem was constructed under the assumption of immobility of capital, but in 1957 Robert Mundell (110) demonstrated the factor version of H-O theorem. He proved that under conditions of factor price equilization, the same international equilibrium, in terms of equilibrium price ratio, factor rewards and consumption can be achieved by either free trade or the unimpeded mobility of capital.

Substitutability of factors and commodities under tariffs and taxes is the main discussion of Ernest Nadel (111, p. 368). He states that ". . . we demonstrate that substitutability between these two avenues of exchange [goods and factors] continue to hold even under conditions of tariff and taxes." Perfect substitutability of capital and free trade is questioned by Rakowski (123). He elaborates on the main difficulties with capital mobility becoming a perfect substitute for commodities in the international market.

A simple explanation of Mundell's substitutability theorem can be given as follows. The mobility of capital in international equilibrium market requires:

$$MPK_{iA} = MPK_{iB}, \text{ where } i = X \text{ and } Y. \qquad (1)$$

If the marginal product of capital in country A in production of either of the two commodities is greater than that of country B, then capital starts to flow from country B to country A until equilibrium is achieved. Now, country A imposes a tariff (t_A) on the import of good Y.

As a result, the price of commodity Y, P_Y, goes up. Let us assume that the return on capital in production of the first commodity (X) remains the same in both countries. Therefore,

$$MPK_{XA} = MPK_{XB} \tag{2}$$

Exchanging the first good for its equivalent value of the second good yield.

$$MPK_{XA} = P_A \, MPK_{YA} \text{ and } MPK_{XB} = P \, MPK_{YB} \tag{3}$$

where $P_A = P(1+t_X)$, $P_A = (\frac{P_Y}{P_X})_A$ is the domestic price ratio in country X and P is the terms of trade.

Comparing (3) and (2) results in (4) $P_A \, MPK_{YA} = P \, MPK_{YB}$. Since P_A is greater than P, relation (4) holds if MPK_{YA} is less than MPK_{YB}, which violates relation (1). This means any restriction on trade must lead to no trade, in the presence of capital mobility. This is the case with complete substitutability of capital mobility and free trade of goods.

We now turn to a geometric presentation of Mundell's substitutability. In Figure 4-2 TT is the production possibility curve for country A. Country A tends to produce more cotton, because it is relatively labor abundant, and cotton is assumed to be labor intensive. In the presence of free trade, production is at point P and consumption at point C with U_1 indicating the level of social welfare.

The trade triangle PQC shows that country A in a free trade situation exports PQ of X and imports QC of Y, which confirms the H-O theorem with assumption of capital immobility. Equilization of the marginal productivity of capital between the two countries causes a

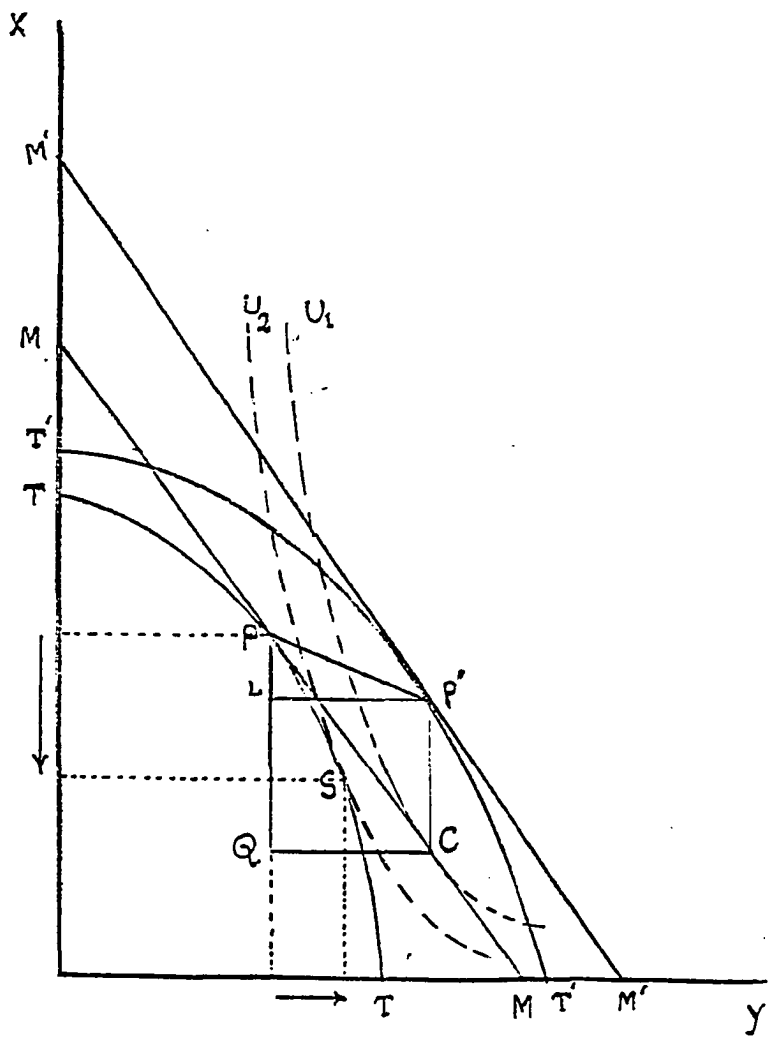

FIGURE 4-2

A GEOMETRIC PRESENTATION OF MUNDELL'S

SUBSTITUTABILITY THEOREM

SOURCE: Robert A. Mundell, " International Trade and Factor Mobility," American Economic Review, June 1957, 47, p. 103.

disincentive for mobility of capital from one country to another, even if there is no restriction on movement of capital.

A prohibitive tariff imposed by country A on the import of commodity Y (capital intensive) results in an initial increase in the price of commodity Y and a set back, in production of X and consumption of Y, to the self-sufficiency point(s). Consequently, resources initially employed in production of X move toward the production of Y. This would lead to a shortage of capital and surplus of labor. Therefore, marginal productivity of capital goes up and marginal productivity of labor goes down. Assuming labor immobility, only capital will move from country B to country A until the marginal productivity of capital becomes equal in two nations. The new production possibility curve will be T'T', production point P' and consumption point will remain at point C, the income level of the country A will not change, and extra production of X, P'C, will return to country B as an earning on capital. Therefore, the same equilibrium results are obtained through mobility of capital and through free trade.

MacDougall-Kemp Model

Another approach to the problem of foreign direct investment was initially presented by MacDougall (101) and further developed by Kemp (85). The main theme of this theory is that capital mobility between countries results in: 1) equalization of marginal productivity of capital internationally; 2) improvement in the use of world resources; 3) an increase in world output, and 4) a higher level of social welfare for all individual countries.

Let us assume that the world contains only two countries, A and B, with the same specification given in the previous section (H-O theorem).

In Figure 4-3 BB′ and AA′ are marginal products of capital in country B and country A, respectively. In the absence of international capital movement, country A produces O_1 M′MB by applying O_1M' of capital with a certain amount of labor and setting the marginal product of capital at the MM′ level. In country A when capital is relatively scarce, the marginal product of capital is higher indicated by M′N. Before capital mobility is allowed between the two countries, A produces $O_2M'NA$ using O_2M' of capital with some amount of labor. If all restrictions on mobility of capital are lifted, capital flows from country A to country B until marginal productivity of capital equalized in the two countries. EE′ represents the international equilibrium price level of the capital; E′M′ is the amount of capital flow from B to A; and E′M′PE is the value of earning on transferred capital repatriated to country B. Comparing $BMM'O_1$ with $O_1M'PEB$ results in the following: The investing country gains PEM as a result of transfer of capital, and following the same procedure, the host country also gains by the amount of triangle NPE. The world's gain from the mobility of capital is the individual sum of the two triangles MPE and NPE, which is indicated by MEN. Therefore, all four of MacDougall's expected conditions have been verified through international mobility of capital.

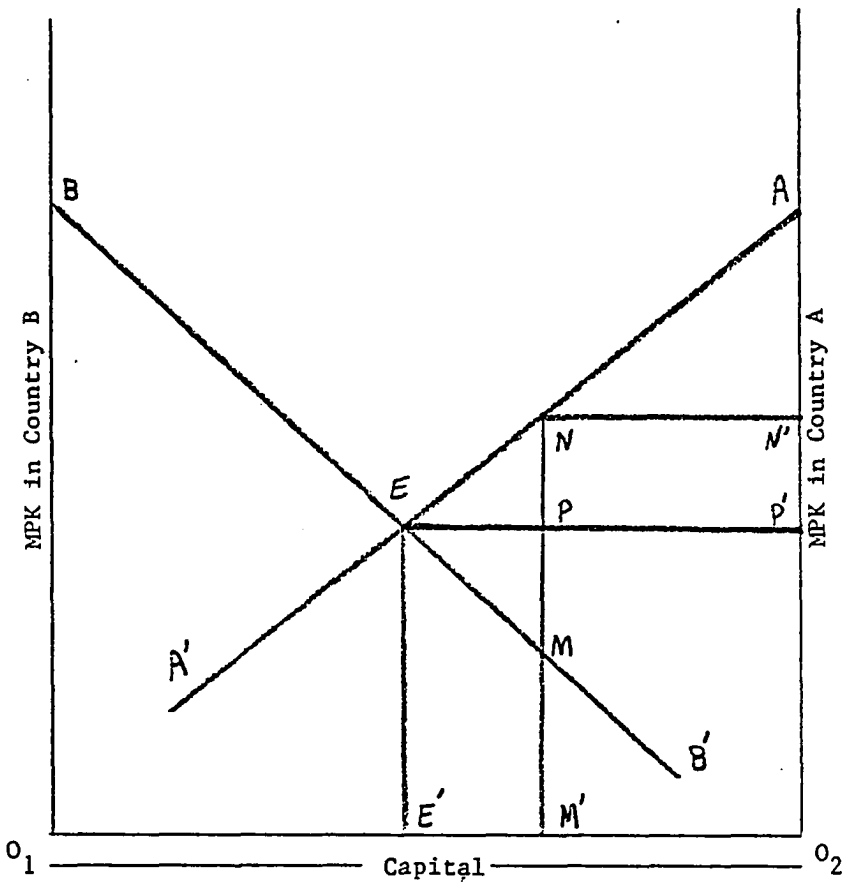

FIGURE 4-3

A GEOMETRIC PRESENTATION OF MACDOUGALL-KEMP MODEL

Source: Kioshi Kojima, Direct Foreign Investment: A Japanese Model of Multinational Business Operations, Praeger Publishers Paper Special Studies, New York, 1978, p. 68.

The Welfare Effect of International Capital Movement in the Presence of Unemployment

The purpose of this section is to develop a model[1] that represents an alternative to the theory of foreign direct investment which addresses international transaction of commodities and mobility of capital in the presence of unemployment.[2] In addition the welfare effect of international capital mobility on the trade position of the two trading partners is considered.

Assumptions and the model

In the standard pure theory of international trade, factor immobility between countries and full utilization of factors are considered essential assumptions. We partially relax these assumptions so that labor is still immobile between countries but capital is free to flow among countries unless otherwise specified. Also, the wage rate is rigid resulting in unemployment of labor. Other assumptions are:

1) Two countries, "home" and "foreign," producing the same two commodities X_1 and X_2 using two factors of production, capital (K) and labor (L);
2) Profit maximization on the part of producer;
3) Perfect competition in all markets, except in the labor market;
4) Concave production function;
5) Full employment of capital, but not of labor

---

[1] Considerable attention is paid to two articles written by Jones (81) and Batra and Seth (16) for development of the model.

[2] The assumption of unemployment is relaxed later and its consequent effect on the welfare position of the home and host country is explored.

A. Supply Side of the Model

$$X_1 = X_1 (K_1, L_1, I_1) \tag{1}$$

$$X_2 = X_2 (K_2, L_2, I_2) \tag{2}$$

where $I_i (i = 1,2)$ is capital inflow or outflow depending on whether the home country is a debtor or an investor. The total capital inflows or outflow is indicated by I, where $I = \sum_{i=1}^{2} I_i$.

All marginal products are positive but diminishing:

$X_{Li} = \partial X_i / \partial L_i > 0$ $\qquad$ $X_{Ki} = \partial X_i / \partial K_i > 0$

$X_{LLi} = \partial X_{Li} / \partial L_i < 0$ $\qquad$ $X_{KKi} = \partial X_{Ki} / \partial K_i < 0$

$X_{LKi} = \partial X_{Li} / \partial K_i > 0$ $\qquad$ $X_{KL} = \partial X_{Ki} / \partial L_i > 0$

Assumption number four, the concavity of production function requires that $X_{KKi} X_{LLi} - X_{KLi}^2 > 0$

The factor reward conditions under assumptions (2) and (3) are:

$$W_1 = X_{L1}(K_1, L_1) \tag{3}$$

$$W_2 = P X_{L2}(K_2, L_2) \tag{4}$$

$$r_1 = X_{K1}(K_1, L_1) \tag{5}$$

$$r_2 = P X_{K2}(K_2, L_2) \tag{6}$$

where $W_1 = W_2 = W$, $r_1 = r_2 = r$, $P = \frac{P_2}{P_1}$, is the price ratio and P_1 is assumed to be equal one.

Employment conditions of factors of production

$$K_1 + K_2 = \bar{K} \tag{7}$$

$$L_1 + L_2 = L \leq \bar{L} \tag{8}$$

B. Demand Side of the Model.

Assuming an index of social welfare, U, to be dependent on consumption of only two goods:

$$U = U\ (D_1,\ D_2) \tag{9}$$

Let the first good be importable and the second good be exportable for the home country.

$$D_1 = X_1 + E_1 \tag{10}$$

$$D_2 = X_2 - E_2 \tag{11}$$

where E_1 and E_2 represent import and export for the home country, respectively.

Suppose the home country is a net investor in the foreign country with (I) amount of investment and (α') rate of return on investment. The balance of payments equation will be given by:

$$E_1 = P\ E_2 + \alpha' I \tag{12}$$

In equation (12) the commodity price ratio P, is not equal to the marginal rate of transformation in the presence of unemployment. In fact, unemployment creates distortion in production which causes the production possibility curve to shrink inwardly. In Figure 4-4 HNH' and HMH are production possibility curves with and without unemployment, respectively. The slope of MM', in absolute value, denotes the marginal rate of transformation at point M which is equal to the commodity price ratio.

$$-\frac{dX_2}{dX_1} = \frac{1}{P}$$

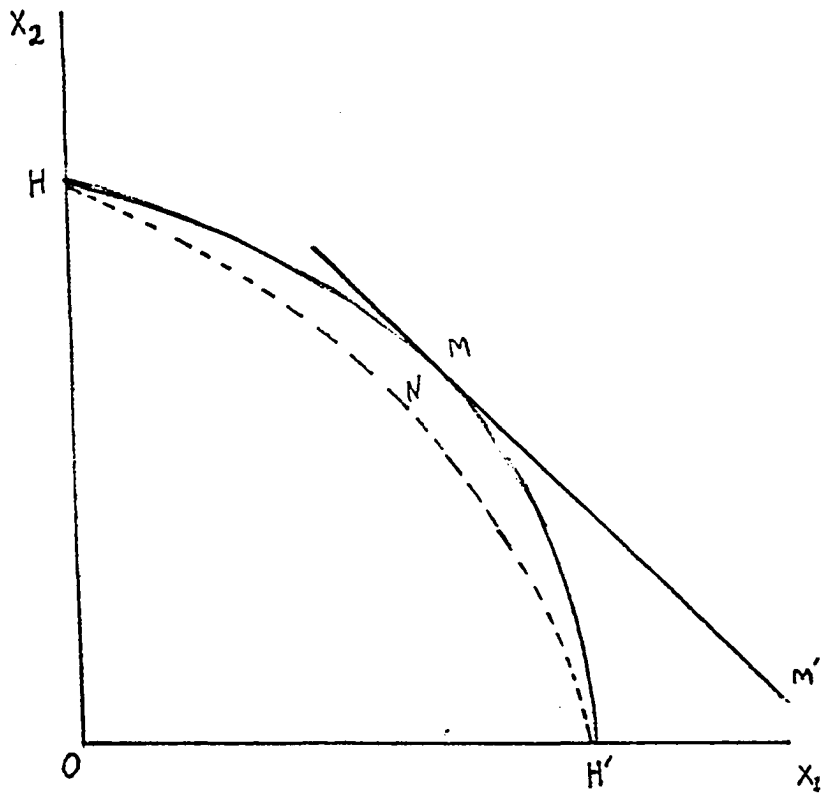

FIGURE 4-4

SHRUNKEN PRODUCTION POSSIBILITY CURVE

The marginal rate of transformation in the presence of unemployment can be derived by differentiating equation (1) and (2), using 3, 4, 5, 6 and 8 as follows:

$$dX_1 = X_{K1}\, dK_1 + X_{L1}\, dL_1$$

$$dX_2 = X_{K2}\, dK_2 + X_{L2} dL_2$$

$$dK_1 + dK_2 = d\bar{K} = 0$$

$$dL_1 + dL_2 = dL$$

$$\frac{dX_2}{dX_1} = \frac{X_{K2}\, dK_2 + X_{L2}\, dL_2}{X_{K1}\, dK_1 + X_{L1}\, dL_1}$$

$$\frac{dX_2}{dX_1} = \frac{X_{K1/P}(-dK_1) + X_{L1/P}(dL - dL_1)}{X_{K1}\, dK_1 + X_L\, dL_1}$$

$$\frac{dX_2}{dX_1} = -\frac{1}{P}\,(1 - X_{L1}\frac{dL}{dX_1}) \qquad (13)$$

In equation (13), since dX_2/dX_1 is negative or zero, $b = X_{L1}(\frac{dL}{dX_1})$ must be less than one. If we relax the assumption of unemployment of labor, $dL = 0$, equation (13) leads to usual equality of marginal rate of transformation and the commodity price ratio.

An important result given by Batra and Seth (16, p. 299) states that dL/dX_1 can be shown to be positive if X_1 is labor intensive relative to X_2. In other words expansion of X_1 due to capital inflow (or any other reason) induces the employment of labor if X_1 is labor intensive. If X_1 is capital intensive, the sign of dL/dX_1 is indeterminate.

Analysis of the social utility of the home and host country

Social utility is assumed to be index for real income of the two countries. Determination of change in real income of the foreign country is as follows:

Let X_1' and X_2' stand for production of the only two commodities produced by the foreign country with production function given by[1]

$$(1)\ X_1' = X_1'(K_1', L_1', I_1')$$

$$(2)\ X_2' = X_2'(K_2', L_2', I_2')$$

where return on capital invested in foreign country

$$\alpha' I = \partial X_1'/dI + P' \partial X_2'/dI$$

and α' is the rate of return on invested capital.[2]

The foreign country's social welfare function is given by:

$$(9)'\ U' = U'(D_1', D_2')$$

Total differentiation of (9)' and division of both sides by U_1' gives:

$$(9)'\ \frac{dU}{U_1'} = d\ D_1' + \frac{U_2'}{U_1'}\ d\ D_2'$$

where $U_i'(i = 1,2)$ is the marginal utility of commodity i and U_2'/U_1' is the marginal rate of substitution, which equals to foreign price ratio, P'.

---

[1] Foreign country notations are indicated by "," in order to distinguish them from home country notations.

[2] In this model, the home country is assumed to be the net creditor and the foreign country, the net debtor.

The budget constraint that indicates a relation between the value of consumption and the value of production with the adjustment of return on capital invested by home country is:

$$D_1' + P'D_2' = X_1' + P' X_2' - \alpha'I \tag{14}$$

Keeping in mind that X_1' and X_2' are exportable and importable goods, respectively, for the foreign country, equations (10)', (11)', and (12)' change to:

$$(10)' \quad D_1' = X_1' - E_1'$$

$$(11)' \quad D_2' = X_2' - E_2'$$

$$(12)' \quad P'E_2' = E_1' - \alpha'I$$

Total differentiation of (14) results in:

$$d D_1' + P' d D_2' + D_2' dP' = d X_1' + P' d X_2' + X_2'dP' - (\alpha' dI + I d\alpha') \tag{15}$$

Rewriting (13) for the foreign country as:

$$(13)' \quad \frac{dX_2'}{dX_1'} = - \frac{1}{P'}(1 - b')$$

or

$$dX_1' = - P' dX_2 + b'dX$$

Substituting dX_1' in (15) and using (11)' gives:

$$dD_1' + P'dD_2' + D_2dP' = - P'dX_2' + b'dX_1' + P'dX_2' + (D_2' - E_2')dP' - (\alpha'dI + Id\alpha')$$

which results in:

$$dD_1' + P'dD_2' = b\, dX_1' - E_2'dP' - \alpha'dI - Id\alpha' \tag{16}$$

Rewriting equation (9) and defining dU/U_1 as change in real income of the foreign country, gives:

$$\frac{dU'}{U_1'} = dD_1' + P'dD_2' \tag{17}$$

Comparing equation (16) and (17) gives the final equation which indicates the changes in real income of the foreign country under conditions of unemployment of labor and capital mobility.

$$\frac{dU'}{U_1'} = b'\, dX_1' - E_2'\, dP' - \{\alpha' dI + Id\alpha'\} \tag{18}$$

From equation (13)', we can see that b' which is equal to $X_{L1}'(\frac{dL'}{dX_1'})$, has to be less than unity in order to hold the negative sign of dX_2'/dX_1'. The sign of b' depends on the relative factor intensity of commodity X_1' and the conditions behind production function. When production functions are homogeneous of degree less than one (diminishing return to scale), b' follows the same sign as it has been explained in the section on the home country.

The first term in equation (18) can be reduced to

$$b'X_1' = X_{L1}'dL' = \bar{W}'dL'$$

which reflects the welfare effect of the wage rigidity. If the foreign country is a developing country, transfer of capital intensive technology has a negative effect on its total employment $dL' < 1$.[1]

The next term indicates that changes in real income of the foreign country depend on its trading position with the home country (E_2') and change in terms of trade (dP').

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[1] One example indicating the negative effect of capital intensive technology on employment of less developed countries is the case of Indonesia reported in the Wall Street Journal, October 27, 1979, "Report on Economics of Indonesia and the Role of MNC in Developing Countries,"

If trade results in deterioration of terms of trade, as may be the case for countries where export is primarily focused on raw materials and primary products, the social welfare of the foreign country is reduced by the amount of the change in terms of trade times the volume of host's import from the home country.[1]

The last term in equation (18) denotes the effect of change in direct foreign investment and its rate of change on the social welfare of the host country. Repatriation of earning on capital and a positive change in rate of return on capital are two factors which lead to deterioration of the social welfare of the host nation. In contrast, reinvestment of earning on capital and a decreasing rate in its rate of return improves the social welfare of that country.

In order to derive the home country's welfare equation which indicates the changes in real income, we may follow Kemp's procedures in using the market-clearing equation for goods.

$$\frac{dU}{U_1} = dD_1 + dD_2 = \{dX_1 + PdX_2\} - \{dE' + PdE_2'\} \qquad (19)$$

---

[1]The idea of deterioration in terms of trade of underdeveloped countries began with a report given by the UN Economic and Employment Commission about the ineffectiveness of foreign money on development of less developed countries and was emphasized by another study on the "relative price of export and imports of underdeveloped countries," published by the U.N. Department of Economic Affairs, New York, December 1949. This report indicates a declining trend in price ratio of primary products to manufacturing commodities for the period 1876-1880. Also, a declining trend has been observed in the relative price of British imports "mostly raw materials" to the price of British exports "mostly manufactured products."

The notion of the tendency for a long-run deterioration of terms of trade in raw material producing countries had gained support from Raul Prebisch and Hans Singer in their famous "Prebisch-Singer Thesis."

substituting equation (13) into (19) and a simple change in the second term yields:

$$(19)' \quad \frac{dU}{U_1} = (-PdX_2 + bdX_1 + PdX_2) - \{dE_1' + P'dE_2'\}$$

$$+ \{-PdE_1' + P'dE_2'\}$$

The second term in (19)' can be transformed into:

$$dE_1' + P'dE_2' = (dD_1' + P'dD_2') - (dX_1' + P'dX_2')$$

Using (18) and (13), it follows that:

$$dE_1' + P'dE_2' = \frac{dU'}{U'} - b'dX_1'$$

$$= b'dX_1' - E_2'dP' - \alpha'dI - Id\alpha' - b'dX_1'$$

$$= -E_2'dP' - (\alpha'dI + Id\alpha')$$

The final results of the changes in the real income of the home country in the presence of unemployment and adjustment for the return on capital invested abroad is as follows:

$$\frac{dU}{U_1} = bdX_1 + E_2'dP' + (\alpha'dI + Id\alpha') + (P' - P)dE_2' \qquad (20)$$

The first term which is equal to $\bar{W}dL$, demonstrates the welfare effect of wage rigidity in the investing country. The second term includes two factors: a) the relative price of commodities and b) the change in exports of the home country. Favorable change in both factors improves the real income of the home country. The third term represents a favorable alteration in the real income of the investing country as a result of the change in the amount of investment and the rate of return on investment abroad. The last term is again in the real income of the host country due to changes in international shipment of goods. Note

that relaxing the assumption of unemployments cancels the first term. Also, comparing equation (20) and (18) shows that the next terms appear in both equations, but positive alteration of these factors is a gain for the home country at the expense of the foreign country.

Batra and Ramachandran's Model

Another version of the macro-economic approach to the international trade and foreign direct investment theory is developed by Batra and Ramachandran (15). Their main contribution is the addition of the role of the "specific factor" to the expanded Hecksher-Ohlin theorem developed by Kemp (86) and Jones (81) in the context of the general equilibrium model of international trade and investment. Specific factors refer to ownership of patents and special managerial knowledge and marketing skills that enable multinational corporations to compete with local firms in foreign countries.

Hufbauer (68) calls these factors--unique knowledge of production and distribution techniques that cannot be easily bought or sold in the free market--technological rent. These factors give enterprise monopolistic or oligopolistic power over rivals as long as the knowledge is kept secret. Leibenstein (99) calls such factors "X-efficiency"; this term includes "motivation efficiency," "incentive efficiency" and psychological factors important in productivity, but is distinguished from allocative efficiency, the main focus in macro-economic theory.

The initial cost of the development of such specific factors may be high, but as the development of a specific factor reaches a certain level of saturation, the cost of transforming such knowledge becomes

almost zero. Therefore, return on organizational techniques, marketing skills and other knowledge of this type is pure profit to the firm.[1]

In this section we do not intend to present the full picture of the Batra and Ramachandran Model; only those parts most important to this study are emphasized.

All assumptions and specifications of a two-by-two Hecksher-Ohlin Model are maintained. In addition, labor remains immobile between countries, but capital that is specific to the firm can flow between trading countries without restriction. The multinational production function includes a specific factor beside the usual two factors of production, capital and labor.

The following points are particularly pertinent in looking at the process of maximizing multinational enterprise profits:

1) Commodities produced by a multinational enterprise in a host country are importable goods, therefore, they must be subject to tariffs imposed by the host nation.

2) The basis for evaluating the corporate income tax levied by the host country is the total value of the products minus the cost of the labor. In this model it is assumed that foreign investment is financed only by the investor from the parent country.

3) The home country provides a certain amount of credit for taxes paid by investors to the host nation.

---

[1] Batra and Ramachandran (15) regard specific factors (s) as public goods with a zero marginal cost. A certain limit is placed on s, $0 < s < \bar{s}$ where $\bar{s}$ is the level of maturation. These specifications are assumed to hold in development of the statistical model in the next chapter.

The marginal conditions for profit maximization provide a set of equations through which the optimum allocation of the factors of production (capital and labor) is determined. The following conclusion can be deduced from the equation representing the optimum allocation of resources:

I. An increase in corporate income tax results in:

1) A decline in the amount of employment of labor by MNC in the host country.

2) A lower level of foreign direct investment in the host country.

3) A lessening of labor's purchasing power in the host country.

4) A loss in the rate of return or capital in both the home and the host country.

5) A rise in the government income of the host country if it initially had a zero or small tax rate. However, a continuing increase in the tax rate may draw all the foreign direct investment back from the host to the investing country, leaving the host country with zero increase in national income. Therefore, there must be an optimum tax rate at which the national income of the host country is at its maximum level.

II. A rise in the tariff rate imposed by the host country produces[1]

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[1]It is assumed that the MNC produces the importable goods in the host country.

1) An increase in the amount of employment of labor by the MNC in the host country.
2) A rise in the transfer of capital from the investing country to the host country. In fact, a tariff imposed by the host country protects the import competing industries as well as attracting a flow of foreign capital to the country.
3) An increase in the real wage rate of the host country (but a decline in real wage rate in the home country).
4) A delay in the real reward of the capital in the host country and a decrease in the rental on capital in the home country.

Batra's Model; Multinational Corporations in Less Developed Countries and the Role of the Specific Factor

The role of multinational corporations in less developed countries had undoubtedly been different from the role of MNCs in developed countries. Some of these differences are stated by Batra (12) and are important to this discussion.

Multinational enterprises transfer more efficient technology, better managerial knowledge, and a higher level of capital to developed countries than less developed countries because of presence of a more powerful economic and political force in developed nations. Also, due to the political stability of industrial nations, MNCs consider the investment to be less risky and therefore a lower portion of profit earned in developed countries would be repatriated. In contrast, MNCs transfer less capital to LDCs and carry short-term projects for immediate profit.

MNCs are said to have more control over the economy of LDCs than DCs and enjoy a low interest rate in an imperfect capital market presence in LDCs.

The main feature of this model is still the introduction of "specific factor" with assumptions and procedures similar to those used in the development of the model described in the Batra and Ramachandran Model (15).

Some of the important results obtained by Batra are as follows:

1) Operation of MNC in an underdeveloped country (characterized by a high unemployment and scarce source of capital) results in a transfer of capital from local industries to the multinational investors and an increase in the employment of the multinational sector at the expense of the local sectors.

2) If the multinational sector concentrates on a relatively capital-intensive production process, the total unemployment of the labor-surplus host country will go up.

3) The multinational corporation creates a decline in real income of the underdeveloped host country.

4) A tax imposed by the host country on non-wage income earned generates a rise in the employment of the capital and labor at the expense of the multinational sector, but this does not serve the overall optimum allocation of resources.

Trade Barriers and Optimum Tariff and Tax

Tariffs are often imposed to protect infant domestic industries and replace import by domestically produced commodities. While imports might be reduced or even eliminated by a high tariff, expansion of

domestic production is by no means guaranteed. A high tariff leads to a higher price for domestic consumers which in turn provides a protected market for both the MNCs who have already had subsidiaries in the host countries and for the new MNCs attracted to the market. The expansion of subsidiaries may endanger the survival of domestic industries. Therefore, the host nations might resort to other restrictive policies such as a discriminative tax policy to protect the domestic producers.

The question is what levels of tariff and tax would be optimum for the host country? These levels depend on the country's trading power and its degree of commodity specialization. The major conclusion of Batra's Model (12, pp. 325-332) for analyzing the optimum tariff and tax are as follows:

1) For a small and completely specialized country, with little trading power, free trade or zero tariff rate is optimum policy, even in the presence of foreign direct investment.

2) For a large, incompletely specialized country, the optimum tariff rate may be either positive or negative, even if the country in question has monopoly power in international trade.

3) For any country regardless of size, the tax rate on foreign direct investment must be zero in order to achieve the maximum welfare for that nation.

The above conclusions are based on the assumption that no interdependence exists between the volume of imports and the level of international investment. However, this assumption becomes less valid for a large country.

CHAPTER V

STATISTICAL ANALYSIS OF THE DETERMINANTS OF U.S. FOREIGN DIRECT INVESTMENT IN THE EUROPEAN ECONOMIC COMMUNITY

Introduction

U.S. direct investment abroad has great influence on the U.S. economy, its trade relations with other countries, and the economy of the host nations. The decision to invest abroad is subject to socio-economic and political factors which simultaneously determine the behavior of foreign direct investment in a host country. Most of the statistical models developed in this area have focused on just a few factors and/or addressed this problem from a macro point of view. The purpose of this chapter is to develop a statistical model which reflects the most important economic and political factors that motivate or deter foreign direct investment and to test the model for the U.S. foreign direct investment in the petroleum industry in the European Economic Community. A simple comparison of the statistical results obtained for the petroleum industry with the results obtained for manufacturing and "all industries" is also provided.

In the first section of this chapter a statistical model for determining the flow of direct foreign investment is developed. This model is based on the neoclassical theory of profit maximization behavior and cost of adjustment advanced by Jorgenson (82) and Kwack (96). The

second section presents the problem with limitations of and sources of the data required for estimation of the statistical model. The third section explains the empirical results obtained on the estimation of the statistical model for the period 1950-1979. This section contains three main parts. The first part discusses the statistical estimation of equations related to U.S. foreign direct investment in the petroleum industry in the EEC(6) using simple linear regression techniques and the polynomial distributed lag model. A detailed explanation of both techniques and their application for estimation of the equations is also provided in this part. The second part examines the structural changes in the trend of U.S. foreign direct investment in the EEC(6) that occurred as a result of the formation of the EEC in 1958 and the imposition of voluntary (1965) and mandatory (1968) control programs by the U.S. government. And, finally, part three compares the statistical results obtained for the petroleum industry with the results obtained for manufacturing and "all industries." The statistical results obtained in this study are then compared with empirical results previously obtained by other economists in this area. Section four includes tables of statistical results and definitions of variables.

Statistical Model

Let us assume that the objective of the U.S. multinational investors is to maximize profit earned in foreign countries, conditioned profit of MNCs at home. The profit maximization is subject to, first, technological constraints imposed by the form of the production function and, second, the balance sheet identity. Since foreign countries include both EEC countries and non-EEC countries, the total profit, which is

simply the summation of profits in two groups of nations, must be maximized. Of course, it is assumed that the domestic investment decisions by U.S. investors are separated from their decisions to invest abroad because of the non-homogeneity of the two markets. Although the two markets are related by the interest rate factor, which is different in the U.S. and in the EEC,[1] this relationship has been accounted for in the model.

Let X and X^* indicate the production function in EEC and non-EEC, respectively.

$$X = X(K,L,T,S) \tag{1}$$

$$X^* = X^*(K^*, L^*, T^*, S^*) \tag{2}$$

where K stands for services of capital, L for labor, T for intermediate products,[2] and S for the specific factor exclusively available to global firms which make them competitive in the world market, and the star represents the variables in the non-EEC.

The production functions are assumed to be linearly homogenous and concave, which satisfies the following properties:

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[1]The U.S. investor's choice of investment depends not only on the interest rate in the U.S. and EEC, but also on interest rate in non-EEC. This factor has not been explicitly taken into account in the model, but there are ways by which it can be justified. First, the interest rate is not the only factor that determines the flow of foreign direct investment from the U.S. Second, in the long run, the presence of international arbitrage activities narrows the significant differences in interest rates among different countries. Third, instead of the U.S. rate of interest, a properly weighted average of the rate of interest in the U.S. and non-EEC can be applied in the model.

[2]In the case of the petroleum industry, T is considered to be crude oil and other related intermediate products.

$X_i>0,\ X_{ii}<0,\ X_{ij}>0$

$X_i^*>0,\ X_{ii}^*<0,\ X_{ij}^*>0$

$(i,j = K,L,T,S;\ i\neq j)$

Also, the second order condition for concavity of production functions are assumed to be satisfied.

Where X_i is marginal product of the ith factor (i.e., $\partial X/\partial K=X_K$) and X_{ii} changes in marginal product with respect to its own factor input (i.e., $\partial X_K(\partial K=X_{KK})$ and X_{ij} is the change in marginal product of the ith factor as a result of change in input factors other than that of its own input (i.e., $\partial X_K/\partial X_L= X_{KL}$).

The balance sheet identify is composed of two parts:

a) the financial balance sheet identify between the U.S. and EEC.

$$qK = A_U + A_E \tag{3}$$

b) the financial balance sheet identify between the U. S. and non-EEC.

$$q^*K^* = A_U^* + A_E^* \tag{4}$$

where

q = price of capital goods;

K = stock of fixed and current assets in EEC;

A_U = the value of U.S. direct investment in EEC;

A_E = the net worth of liabilities owed to non-U.S. investors.

The total foreign profit, Π_{TL}, after corporate income tax is given by:

$$\Pi_{TL} = \Pi+\Pi^{*} = (1-t_E)[PX-WL-TP_T-F-(r_E-g_E^e)A_E-(r_U-g_U^e)a_U-\delta qK] +$$

$$(1-t_R)[P^{*}X^{*}-W^{*}L^{*}-T^{*}P_T^{*}-F^{*}-(r_R-g_R^e)A_R \qquad (5)$$

$$-(r_U-g_U^e)A_U^{*}-\delta^{*}q^{*}K^{*}]$$

where:

$P_T = P_T^{*}(1 + T)$

t_E = the corporate profit tax rate levied by EEC

t_R = the corporate profit tax rate levied by the rest of the world

X = level of output

P = price of output

q = price of capital goods

W = price of labor services

P_T = price of intermediate products

δ = depreciation rate of fixed and current capital

r_U = interest rate in the United States[1]

r_E = interest rate in European Economic Community

r_R = interest rate in the rest of the world

g_E^e = expected rate of price changes of foreign capital goods

g_U^e = expected rate of price changes of U.S. fixed and current capital goods

T = tariff rate on import of intermediate products

F = fixed cost of specific factors, which is considered to be negligible.

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[1]For an empirical case, the rate of return of petroleum in the U.S. might be substituted.

Substituting (1) into (5), the first order condition for profit maximization with respect to labor, L, and intermediate products, T, can be given as:

$$\frac{\partial X}{\partial L} = \frac{W}{P} \qquad \frac{\partial X^*}{\partial L^*} = \frac{W^*}{P^*}$$

$$\frac{\partial X}{\partial T} = \frac{P_T}{P} \qquad \frac{\partial X^*}{\partial T^*} = \frac{P_T^*}{P^*} \tag{6}$$

Substituting A_U from (3) into (5), the marginal condition with respect to K yields:[1]

$$\frac{\partial X}{\partial K} = q[(r_U - g_U^e) + \delta]/P \tag{7}$$

Substituting A_E from (3) into (5) gives:

$$\frac{\partial X}{\partial K} = q[(r_E - g_E^e) + \delta]/P \tag{8}$$

Assuming production functions belong to the CES class (being homogenous of degree one and having constant elasticity of substitution), the production function can be written as:

$$X = A[\alpha_1 K^{-\rho} + \alpha_2 L^{-\rho} + \alpha_3 T^{-\rho} + \alpha_4 S^{-\rho}]^{\frac{-1}{\rho}} \tag{9}$$

where marginal productivity of capital is given by

$$\frac{\partial X}{\partial K} = \alpha_1 K^{-\rho-1}(-\rho)A(\frac{-1}{\rho})[\alpha_1 K^{-\rho} + \alpha_2 L^{-\rho} + \alpha_3 T^{-\rho} + \alpha_4 S^{-\rho}]^{\frac{-1}{\rho}-1}$$

$$\frac{\partial X}{\partial K} = \alpha_1 K^{-(\rho+1)} A[\alpha_1 K^{-\rho} + \alpha_2 L^{-\rho} + \alpha_3 F^{-\rho} + \alpha_4 S^{-\rho}](\frac{-1}{\rho})(1+\rho)$$

---

[1] Since the objective is to derive the desired capital in the EEC, only the marginal condition for capital in EEC is derived.

$$\frac{\partial X}{\partial K} = \alpha_1 (\frac{X}{K})^{1+\rho} \tag{10}$$

where α_1 is input elasticity of capital and ρ is a constant term which must be estimated.

Comparing equation (7) with (10) results in the following:

$$\alpha_1 (\frac{X}{K})^{1+\rho} = q[(r_U - g_U^e) + \delta]/P \tag{11}$$

For the sake of simplicity, let us assume that $\rho = 0$. Then, the desired level of fixed and current capital will be shown as:

$$qK^e = \alpha_1 XP/[(r_U - g_U^e) + \delta] \tag{12}$$

In case the U.S. direct investment is not financed by non-U.S. funds, the desired value of direct foreign investment is the same as qK^e. But if U.S. direct foreign investment is financed by non-U.S. funds, then the variability of foreign exchange rates must be taken into account either through a model that considers foreign exchange rate under uncertainty or by minimizing the financial risk.

The latter option is applied in this work. Therefore, one can minimize the rental cost of fund subject to balance sheet identity.

Considering the equality of expected rental cost in the U.S. and the EEC (equations (7) and (8)), the variance of the rental cost around the equilibrium, σ^2, is given by:[1]

$$VAR(A_U^e/qK^eU,\ A_E^e/qK^eE) = VAR(A_U^e/qK^eU) + VAR(A_E^e/qK^eE) + COV(A_U^e/qK^eU,\ A_E^e/qK^eE)$$

---

[1] Kwack (64) has assumed A_U and A_E to be independent in deriving the variance of the rental cost of capital.

$$\sigma^2 = (A_U^e/qK^e)^2\sigma_U^2+(A_E^e/qK^e)^2\sigma_E^2+\frac{A_U^eA_E^e}{(qK^e)^2}\sigma_U\sigma_E \qquad (13)$$

Minimizing the variance of the rental cost, σ^2, with respect to the balance sheet identity is represented by:

$$Z = (A_U^e/qK^e)^2\sigma_U^2+(A_E^e/qK^e)^2\sigma_E^2+\frac{A_U^eA_E^e}{(qK^e)^2}\sigma_U\sigma_E+ \qquad (14)$$
$$\lambda_1(1-A_U^e/qK^e-A_E^e/qK^e)$$

Taking partial differential of Z with respect to A_U and A_E leads to:

$$\partial Z/\partial A_U^e = 2\sigma_U^2(A_U^e/qK^e)(\frac{1}{qK^e})-\sigma_U\sigma_EA_E^e/(qK^e)^2-\lambda_1(1/qK^e) = 0 \qquad (15)$$

$$\partial Z/\partial A_E^e = 2\sigma_E^2(A_E^e/qK^e)(1/qK^e)-\sigma_U\sigma_EA_U^e/(qK^e)^2-\lambda_1(1/qK^e) = 0 \qquad (16)$$

Multiplying both sides of equations (15) and (16) by qK^e and comparing the two relations results in:

$$2\sigma_E^e(A_U^e/qK^e)-\sigma_U\sigma_EA_E^e/qK^e = 2\sigma_E^2(A_E^e/qK^e)-\sigma_U\sigma_EA_U^e/qK^e$$

Substituting A_E from relation (3) into the above relations and simplifying the result leads to:

$$2\sigma_E^2(\frac{qK^e-A_U^e}{qK^e})-\sigma_U\sigma_EA_U^e/qK-2\sigma_U^2(A_U/qK)+\sigma_U\sigma_E(\frac{qK^e-A_U^e}{qK^e}) = 0$$

$$2\sigma_E^2-2\sigma_E^2(A_U^e/qK^e)-\sigma_U\sigma_E(A_U^e/qK^e)-2\sigma_U^2(A_U^e/qK^e)+\sigma_U\sigma_E-\sigma_U\sigma_E(A_U^e/qK^e) = 0$$

$$A_U^e/qK^e(2\sigma_U^2+2\sigma_E^2+2\sigma_U\sigma_E) = \sigma_U\sigma_E+2\sigma_E^e$$

The final relation is given by:

$$A_U^e/qK^e = \frac{\sigma_U\sigma_E+2\sigma_E^2}{2(\sigma_U^2+\sigma_E^2+\sigma_U\sigma_E)} \tag{17}$$

If the two variances are independent, the desired level of foreign direct investment can be reduced to:

$$A_U^e = (\sigma_E^2/\sigma_U^2+\sigma_E^2)qK^e \tag{18}$$

Substituting qK^e from (12) into (18) gives:

$$A_U^e = a[PX/(r_U-g_U^e+\delta)] \tag{19}$$

where

$$a = \alpha\sigma_E^2/(\sigma_E^2+\sigma_U^2) \text{ and } 0<a<1$$

The relative variance of the rental cost of capital is assumed to remain constant in the empirical part of the study. A distributed lag model is applied, instead of a constant lag structure. The direct investment flow at time t, I_{Ut}, can be approximated by one form of the Koych adjustment model. Let the following relations represent the Koych adjustment for I_{Ut}:

$$I_{U,t} = a_3[A_{U,t}^e - A_{U,t-1}] + \sum_{K=0}^{m} a_{2K}C_{U,t-K} + \sum_{i=1}^{n}\sum_{j=0}^{\ell} a_{ij}Y_{i,t-j} \tag{20}$$

where

$Y_{i,t-j}$ = factors other than those included in the model

$A_{U,t-1}$ = direct investment stock at the beginning of the period

$C_{U,t-K}$ = corporation retained profits and capital accumulation allowances with a lag of K period.

Substituting for A_U^e from (19) into (20) yields:

$$I_{U,t} = a_0 + a_1[PX/(r_U - g_U^e + \delta)]_t + \sum_{K=0}^{m} a_{2K} C_{U,t-K} + a_3 A_{U,t-1} + \sum_{i=1}^{n} \sum_{j=0}^{\ell} a_{ij} Y_{i,t-j} + U_t \qquad (21)$$

The expected signs of the coefficients are:

$a_1 > 0$ $\qquad$ $a_{2K} > 0$ $\qquad$ $a_3 > 0$

Other independent variables and their expected signs are as follows:

1) size of the market with a positive expected sign;

2) growth of the market with a positive expected sign;

3) tariff discrimination with a negative expected sign;

4) wage differential with a positive expected sign;

5) other policy variables include a dummy variable for the formation of the European Economic Community (6 members) in 1958, a Dummy Variable for the "Voluntary Restraining Program" 1965 and a Dummy Variable for the Mandatory Control program in 1968, the expected signs are positive, negative, and negative, respectively.

Equation (21) is the final equation employed for estimation purposes. In this equation, the depreciation rate, δ, is assumed to be constant and negligible. Also, presence of C_U and $A_{U,t-1}$ (the two explanatory variables in the equation) may create multicollinearity. Therefore, $A_{U,t-1}$ is transformed to the right hand side of the equation. In other words, the stock--rather than the flow--of foreign direct investment is regressed on the explanatory variables. The equation, before transformation for the U.S. foreign direct investment in the EEC(6)[1] petroleum industry, is as follows:

$$IEC6P = \alpha_0 + \alpha_1 \, SPEC6D + \alpha_2 \, REEC6P + \alpha_3 \, FDT1 + \sum_{i=1}^{n} \sum_{j=0}^{\ell} \alpha_{ij} \, Y_{i,t-j} + U \qquad (22)$$

where:[2]

IEC6P = The flow and retained earnings of U.S. foreign direct investment in the EEC(6) for the petroleum industry, replaced for $I_{U,t}$ in equation (21) (unit-millions of 1972 dollars).

SPEC6D = Total sales by majority owned foreign affiliates of U.S. companies in the EEC(6) for the petroleum industry, deflated. SPEC6D is defined as: SPEC6D = SPEC/(RU-GUE) where RU is long term U.S. government bond yields and GUE is the change in the U.S. GNP price deflator. SPEC6D is substituted for $[PX/(r_U - g_U^e + \delta)]$ in equation (21) (unit-millions of 1972 dollars).

REEC6P = U.S. nonfinancial corporations' retained earning in the EEC(6) for the petroleum industry. REEC6P is

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[1] EEC(6): the European Economic Community formed in 1958 with six initial members (Belgium, Germany, France, Italy, Luxembourg, and Netherlands).

[2] Complete definitions of all dependent and independent variables are given on Table 5-9.

applied in place of $C_{U,t-K}$ in equation (20) (unit-millions of 1972 dollars).

FDT1 = Stock of foreign direct investment in the EEC(6) for the petroleum industry with one period lag (replacing $A_{U,t-1}$ in equation (21) (unit-millions of 1972 dollars).

$Y_{i,t-j}$ includes:

1) A polynomial distributed lag model for the size of the market. The proxy variable selected for the size of the market is: The Dollar value of the Gross Domestic product of the six members of the European Economic Community in 1972 prices, labeled as GDPEC6 (Unit-billions of 1972 dollars).

2) Growth of the market. Two proxy variables are chosen for the growth of the market:

   a) Annual change in GDPEC6, defined as:

      AGEC6 = GDPEC6 - GDPEC6(-1)

   b) Percentage change in GDPEC6 defined as:

      GEC6 = [GDPEC6 - GDPEC6(-1)]/GDPEC6

3) Tariff discrimination hypothesis. Three proxy variables are selected to replace tariff discrimination:

   a) TDV: the ratio of U.S. export to EEC(6) export over export of EEC(6) to other EEC(6), defined as:

      TDV = (USEEC6/EC6TEC6)

   b) TDVC: change in tariff discrimination rate defined as:

      TDVC = TDV - TDV(-1)

   c) DUMTD: proxy variable indicating tariff discrimination after the formation of the EEC(6), defined as DUMTD = TDV*DUM58, where DUM58 takes the value of zero for the (1950-1957) period and the value of one for the (1958-1979) period.

4) WD6: wage differential between the U.S. and the EEC(6), defined as:

WD6 = [WUS - WEEC(6)]/WEEC(6)

where WUS and WEEC(6) are the average gross hourly earnings in private nonagricultural industries in the U.S. and the EEC(6), respectively (unit-1972 dollar).

5) DUM58: Dummy variable for the formation of the European Economic Community (6 members) in 1958.

6) D5872: Dummy variable to identify the impact of the formation of the EEC(6) on foreign direct investment for the 1958-1972 period.

7) DUM65: Dummy variable to describe the effect of the "Voluntary Restraint Program" on direct foreign investment which takes the value of zero for 1950-1964 and the 1970-1979 periods and the value of one for the 1965-1969 period.

8) DUM68: Dummy variable reflecting the impact of the Mandatory Control Program on the flow of foreign direct investment which takes the value of zero for 1950-1967 and the 1970-1979 periods and the value of one for the 1968-1969 period.

9) GUS: Proxy variable indicating the impact of the "home" country's growth on the outflow of foreign direct investment.

Sources and Limitations of Data

The purpose of this section is to discuss the sources and limitations of the data used in this study. The discussion of data limitations follows:

The data series for most of the variables in the model were limited to the 1950-1979 period, on an annual basis. This constraint on the data leaves a limited degree of freedom for estimation purposes, which, in turn limits the number of independent variables (economic and political) that can be included in the model. Also, a limited time-series data creates constraints on the inclusion of a long time lag

expected to exist between a MNC's decision to invest in a host country and growth of the host market. Lagging independent variables or using the polynomial distributed lag model reduces the degree of freedom in a time-series with a limited number of observations and thus reduces the stability of the parameter estimates.

A second problem is related to the accuracy of the data. Data related to the operations of multinational corporations in host nations may be manipulated for transfer pricing purposes or it may be kept secret for confidential purposes.

A third problem is that, in some cases, the reported data is not disaggregated by country and by industry, as required by the model. In such cases, the data is disaggregated through proper proxy variables. The time-series data was collected for 30 years, the 1950-1979 period. Prior to 1950, data for most of the variables either are not available or are in aggregated form, and thus impossible to use.

The main concern of this study was the collection of data related to the determinants of U.S. foreign direct investment in the petroleum industry in the European Economic Community of 6 members (West Germany, Italy, France, Belgium, Netherlands and Luxembourg), EEC of 9 members (EEC(6) and Denmark, Ireland and United Kingdom), and non-EEC countries. The data for manufacturing and "all industries" were also obtained to compare the determinants of foreign direct investment in petroleum to that in manufacturing and all industries. The main sources of data for different variables were as follows:

1) Historical data for U.S. foreign direct investment in different countries and for different industries required for this study

was obtained from various monthly issues of Survey of Current Business, published by the Bureau of Economic Analysis of the U.S. Department of Commerce, Washington, D.C. 20230.

2) The flow of foreign direct investment plus retained earning was acquired by subtracting the U.S. direct investment position at time (t) from its position at time (t-1).

3) U.S. nonfinancial corporations' retained earning in different countries and for different industries was obtained from the Survey of Current Business, various issues.

The historical data for long-term U.S. government bond yields were from two main sources, Standard and Poor's Statistical Service Security Price Index Record, Standard and Poor's Corp., and monthly issues of Federal Reserve Bulletin, Board of Governors of the Federal Reserve System, Washington, D.C. 20551

4) Total sales by majority-owned foreign affiliates of U.S. companies by major industries (petroleum, manufacturing, and others) and countries were obtained from various issues of the Survey of Current Business.[1]

5) The implicit price deflator of the U.S. GNP was obtained from the Economic Report of the President, transmitted to the Congress, 1980, United States Government Printing Office, Washington, D.C., 1980.

6) The main source of data on the Gross Domestic Product for the European Economic Community was the Statistical Yearbook of the

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[1]The available data for the 1956-1960 period were in aggregated form. Therefore, they were disaggregated by using proper proxy variables. Also, total sales data for 1950-1955 period were estimated by first regressing the 1956-1979 data on time, and then estimating the 1950-1955 data from the estimated regression.

United Nations, various volumes. The historical data for the gross domestic product was only available in the purchaser's value, at current prices and in different countries' currency units, which had to be converted into dollar value at constant prices. Therefore, the data for each country was first converted into dollar amounts by their respective historical average yearly exchange rate and then the results were transformed into constant dollars using the consumer price indexes (1972 = 100), for the countries used in this study, and finally the GDPs of the six EEC members (France, Germany, Italy, Belgium, Netherlands, and Luxembourg) were added in order to get the dollar value of the GDP of the EEC(6) in constant prices. The GDP for the EEC(9) was obtained by adding the dollar value of the GDPs of Denmark, Ireland, and United Kingdom to the GDP for EEC(6).[1]

7) The historical data for the U.S. gross national product in 1972 dollars were obtained from the Economic Report of the President, transmitted to the Congress, 1980.

8) U.S. export to the EEC (both 6 and 9 members) and, EEC(6 and 9) export to other EEC countries was obtained from the Yearbook of International Trade Statistics, 1947-1979, United Nations, various volumes.

9) Historical data on annual hourly earning in private non-agricultural industries in the United States was acquired from Statistical Abstract of the United States, U.S. Department of Commerce, Bureau of the Census, various issues.

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[1]Historical data for the annual average exchange rate and consumer price index for the EEC countries are reported in the Statistical Yearbook of the United Nations, various issues.

10) Historical data on the average gross hourly earning in private nonagricultural industries in the EEC were obtained from the Statistical Yearbook of the United Nations. The available data were in current prices and in terms of currency unit of the respective countries in the EEC. This data had to be converted into 1972 dollars. The procedure for this conversion is the same as the one followed for the conversion of the GDP of the EEC into constant dollar.

Statistical Results

The purpose of this section is first, to identify (and test the accuracy of the identification of) the determinants of the U.S. foreign direct investment in the European Economic Community for the petroleum industry. Second, to identify the structural changes in the trend of U.S. foreign direct investment in the EEC(6) that resulted from the formation of the EEC and the imposition of voluntary and mandatory control programs; and third, to compare the empirical results obtained for the petroleum industry in the EEC(6) to the statistical outcome of U.S. foreign direct investment in: 1) manufacturing industry in the EEC(6); 2) "all industries" in the EEC(6); 3) petroleum industry in the EEC(9); 4) manufacturing industry in the EEC(9); and 5) "all industries" in the EEC(9).

Equation (22) can be estimated for the petroleum industry in the EEC(6) by using ordinary least squares, OLSQ. If the error term satisfies the standard assumptions of OLSQ, the estimated α's will be the best linear unbiased estimates. Since data constraints leave a limited degree of freedom for estimation purposes, equation (22): 1) includes three main variables SPEC6D, REEC6P, and GDPEC6, using ordinary

least squares estimation; 2) uses a polynomial distributed lag model for GDPEC6 in (1); 3) includes "other variables," labeled as Y_i in equation (22), one by one in (1) and (2).

1) A first attempt at model estimation using SPEC6D, REEC6P, and GDPEC2 (GDPEC6 lagged 2 years) yields the following regression results:

$$\begin{aligned} \text{FIEC6P} = &-1016.66 + 0.199644\ \text{SPEC6D} + 1.04455\ \text{REEC6P} \\ &\quad (-7.38) \qquad (2.25) \qquad\quad (6.18) \\ &+ 7.01164\ \text{GDPEC2} \\ &\quad (11.04) \end{aligned} \tag{23}$$

$\bar{R}^2 = 0.9929$ $\quad F(3,24) = 1256.09$ $\quad N = 28$

$DW = 1.0821$

Note: t-statistics appear in parentheses below the coefficients.

The reason for using GDP with a two year lag period in equation (23) is that, there is not a priori knowledge or past experience indicating the exact time of the lag appropriate for this equation. Also, theoretically, there are grounds for assuming the existence of lag between the change in the market size (GDP) and decision to invest. Therefore, in a search procedure various lag structures for GDP were tested and the one which had the best explanatory power was chosen. The term "best" here is defined as the theoretically expected sign for coefficients, a high $\bar{R}^2$, and t-statistics significantly different from zero.

Equation (23) meets the criteria of high R-squared (adjusted)[1] value and represents the theoretically expected signs for the explanatory

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[1] The adjusted R-squareds are computed using the following formula: $\bar{R}^2 = R^2 - (K-1/n-K)\ (1-R^2)$ where K is the number of regressors and n is the number of observations.

variables. Also, the estimated parameters of equation (23) have t-statistics significantly different from zero at 5 percent level of significance. The low value of Durbin-Watson statistics (DW) in equation (23) indicates the presence of a positive first-order serial correlation. For this reason the method applied to remove the autocorrelation is the Cochrane-Orcutt iterative process (CORC). Applying (CORC) to equation (22) results in equation (24) which is reported in Table 5-1. The difference between equation (23) and (24) is that, in equation (24) DW shows no autocorrelation and the coefficient of SPEC6D has a t-statistics which is significantly different from zero at one percent level of significance, but the constant term becomes insignificant.

2) In a second estimation attempt of equation (22), FIEC6P is regressed on SPEC6D, REEC6P and GDPEC6 using a polynomial distributed lag formulation. The model is:

$$\begin{aligned} FIEC6P_t = \alpha + \gamma_1\ SPEC6D_t + \gamma_2\ REEC6P_t + \beta_0\ GDPEC6_t \\ + \beta_1\ GDPEC6_{t-1} + \beta_2\ GDPEC6_{t-2} + \beta_3\ GDPEC6_{t-3} \\ + \beta_4\ GDPEC6_{t-4} + \beta_5\ GDPEC6_{t-5} + \xi_t. \end{aligned} \tag{25}$$

Before presenting the estimated form of equation (25) it is necessary to mention some important points for the estimation of a polynomial distributed lag model (PDLM). A PDLM assumes that the lag weights can be specified by a continuous function, such as:

$$\beta_i = a_0 + a_1 i + a_2 i^2 + a_3 i^3 \tag{26}$$

for (i=0, ... , 5). The lag weight in (26) is specified with a third-degree polynomial and a six period lag. Substituting for i in (26) obtains the following form for the βs.

$$\begin{aligned}
\beta_0 &= a_0 \\
\beta_1 &= a_0 + a_1 + a_2 + a_3 \\
\beta_2 &= a_0 + 2a_1 + 4a_2 + 8a_3 \\
\beta_3 &= a_0 + 3a_1 + 9a_2 + 27a_3 \\
\beta_4 &= a_0 + 4a_1 + 16a_2 + 64a_3 \\
\beta_5 &= a_0 + 5a_1 + 25a_2 + 125a_3
\end{aligned} \tag{27}$$

In (27), the βs (unknowns) are expressed in terms of as (unknown). Substituting (27) in (25) gives:

$$\begin{aligned}
\text{FIEC6P}_t = {} & \alpha + \gamma_1 \text{ SPEC6D}_t + \gamma_2 \text{ REEC6P}_t \\
& + a_0(\text{GDPEC6} + \text{GDPEC6}_{t-1} + \ldots + \text{GDPEC6}_{t-5}) \\
& + a_1(\text{GDPEC6}_{t-1} + 2\text{GDPEC6}_{t-2} + \ldots + 5\text{GDPEC6}_{t-5}) \\
& + a_2(\text{GDPEC6}_{t-1} + 4\text{GDPEC6}_{t-2} + \ldots + 25\text{GDPEC6}_{t-5}) \\
& + a_3(\text{GDPEC6}_{t-1} + 8\text{GDPEC6}_{t-2} + \ldots + 125\text{GDPEC6}_{t-5})
\end{aligned} \tag{28}$$

In equation (28), α, βs, and as can be estimated using ordinary least squares. βs can be estimated by substituting the estimated value of as from (28) into (27).

The above procedure for the estimation of βs is based on the assumption of no end point restriction. In our example, neither β_{-1} (head restriction) nor β_6 (tail restriction) is assumed to be zero. If we assume, for example, head restriction for equation (25) the formula for the estimation of the βs can be derived as follows:

Rewriting (26) as:

$$\beta_i = \sum_{i=0}^{k=5} (a_0 + a_1 i + a_2 i^2 + a_3 i^3) \tag{29}$$

Substituting for i = k+1 = 0 in (26) gives:

$$\beta_{k+1} = a_0 + a_1(k+1) + a_2(k+1)^2 + a_3(k+1)^3 = 0$$

or (30)

$$a_0 = -a_1(k+1) - a_2(k+1)^2 - a_3(k+1)^3$$

Substituting (30) in (29) and rewriting the formula yields

$$\beta_i = \sum_{i=0}^{k=5} \{-a_1[(k+1)-i] - a_2[(k+1)^2-i^2] - a_3[(k+1)^2-i^3]\} \quad (31)$$

In the estimation of equation (25) an exhaustive search was made to find an appropriate degree of polynomial, a proper lag period, and an end point restriction which best meet the model's criteria. The expected criteria for the model are defined as theoretically expected signs for the estimated coefficients with a reasonable size; an inverted (U) shape for the weights of the lag coefficients; and high R-squared (adjusted) values, and t-statistics indicating that the estimated coefficients are significantly different from zero. In the process of estimating equation (25), it was found that a GDP with a third-degree polynomial with a five period lag and a tail restriction with the lag structure starting from (t-1) had the highest explanatory power. The estimate of equation (25) with the above specification takes the following form:

$$\begin{aligned} FIEC6P = {} & \underset{(12.16)}{-1200.81} + \underset{(2.48)}{0.156120}\ SPEC6D + \underset{(3.39)}{0.448474}\ REEC6P \\ & + \underset{(3.42)}{28.0412}\ GDPEC6_{(t-1)} + \underset{(4.28)}{34.04841}\ GDPEC6_{(t-2)} \\ & + \underset{(5.14)}{37.37806}\ GDPEC6_{(t-3)} + \underset{(6.04)}{28.99908}\ GDPEC6_{(t-4)} \end{aligned} \quad (32)$$

$$\bar{R}^2 = .9978 \qquad F(5,20) = 2353.80 \qquad N = 26 \qquad DW = 2.06$$

The coefficients of GDPEC6 in equation (32) were estimated by substituting the value of as which were directly estimated using ordinary least squares, and k, which took the value of 3 in equation (31). Rewriting equation (31) as:

$$\beta_i = \sum_{i=0}^{k=3} \{-4.42555(4-i) - 3.10193(16-i^2) + 1.49022(64-i^3)\}$$
$$\qquad\qquad (6.96) \qquad\qquad (5.58) \qquad\qquad (-3.03)$$

Substituting for (i = 0, . . ., 3) gives:

$$\beta_0 = 28.0412 \quad \beta_1 = 34.04841 \quad \beta_2 = 37.37806 \quad \beta_3 = 28.99908$$

The t-statistics for the coefficients of the GDPEC6 in equation (32) were estimated using the following procedure:

The variance of β_1 in equation (31) can be written as:

$$\begin{aligned} V(\hat{\beta}_i) = \sum_{i=0}^{k=5} \{ & V(a_1)[-(k+1) + i]^2 + V(a_2)[-(k+1)^2 + i^2]^2 \\ & + v(a_3)[-(k+1)^3 + i^3]^2 + cov(a_1,a_2)[(k+1)-i][(k+1)^2-i^2] \\ & + Cov(a_1,a_3)[(k+1) - i][(k+1)^3-i^3] \\ & + Cov(a_2,a_3)[(k+1)^2 - i^2][(k+1^3)-i^3]\} \end{aligned} \tag{33}$$

Substituting k=3 in equation (33) results in:

$$\begin{aligned} V(\hat{\beta}_i) = \sum_{i=0}^{k=3} \{ & V(a_1)(i-4)^2 + v(a_2)(i^2-16)^2 + V(a_3)(i^3-64)^2 \\ & + Cov(a_1,a_2)(4-i)(16-i^2) + Cov(a_1,a_3)(4-i)(64-i^3) \\ & + Cov(a_2,a_3)(16-i^2)(64-i^3)\} \end{aligned} \tag{34}$$

Substituting for i=0, . . . 3 and the value of variances and covariances of the as in (34) gives:

$$V(\hat{\beta}_0) = .404(16) + .309(256) + .0242(4906) + (-.260)(4)(16)$$
$$+ (-0.0656)(4)(64) + (-0.0825)(16)(64)$$
$$= 66.8864$$

$$V(\hat{\beta}_1) = 63.2499$$

$$V(\hat{\beta}_2) = 52.976$$

$$V(\hat{\beta}_3) = 23.06$$

The standard errors for the βs are:

$S_{\beta_0} = 8.1784$ $\qquad$ $S_{\beta_2} = 7.2785$

$S_{\beta_1} = 7.9530$ $\qquad$ $S_{\beta_3} = 4.8021$

$$t_{\hat{\beta}_0} = \frac{\hat{\beta}_0}{S_{\hat{\beta}_0}} = \frac{28.0412}{8.1784} = 3.42$$

$$t_{\hat{\beta}_1} = \frac{\hat{\beta}_1}{S_{\hat{\beta}_1}} = \frac{34.04841}{7.953} = 4.27$$

$$t_{\hat{\beta}_2} = \frac{\hat{\beta}_2}{S_{\hat{\beta}_2}} = \frac{37.37806}{7.2785} = 5.14$$

$$t_{\hat{\beta}_3} = \frac{\hat{\beta}_3}{S_{\hat{\beta}_3}} = \frac{28.99908}{4.8021} = 6.04$$

The t-statistics for the rest of the equations can be obtained in the same procedure as described for equation (32).[1]

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[1]This study does not provide the t-statistics for the rest of the equations, because it was very time consuming to estimate them.

Equation (32) has a high adjusted R-squared and the theoretically expected signs for the explanatory variables. The t-statistics indicate that the estimated coefficients for both regular and polynomial distributed lag parameters are significantly different from zero. The Durbin-Watson statistics (DW = 2.06) show no sign of first-order autocorrelation, which is considered an improvement over the simple ordinary least-squared estimation represented by equation (23).

The coefficients of equation (32) can be interpreted as follows: An increase of $1 million in the total sales of U.S. companies in the EEC(6) in the petroleum industry results in an increase in the foreign direct investment stock in the EEC(6) for the petroleum industry by $156,120 yearly, assuming other variables remain constant. Also, the positive relation between SPEC6D and FIEC6P indicates that an increase in the U.S. interest rate generates a reduction in the stock of foreign direct investment in the host nations, other factors remaining equal. The results obtained from the relation between the foreign direct investment and both total sales and the U.S. interest rate tend to support those of Kwack (96).[1] The proxy variable for the dollar value of output chosen by Kwack was the GNP of Canada, the United Kingdom, Japan, and West Germany and the export of developed countries, which may not be an appropriate proxy variable for the dollar value of output produced by foreign affiliates of the U.S. companies. Therefore, his result cannot

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[1]Kwack's model (96) considers U.S. direct foreign investment by all industries in all of the world, while this study presents the determinants of U.S. foreign direct investment by industry by a specific group of countries. In this section the determinants of U.S. foreign direct investment in petroleum industry in the EEC(6) is examined.

be compared to the result of this study. In fact, his choice of GNP as a proxy variable for the dollar value of output by U.S. investors in foreign countries is more suitable for representing the size of the market as discussed later.

In equation (32) a one billion dollar increase in the retained earnings by foreign affiliates of U.S. companies in the EEC(6) in the petroleum industry, if all other variables remain constant, adds $448,474 to the stock of foreign direct investment in the petroleum industry in the EEC(6). The estimated result of the coefficient of REEC6P provided in the present study is comparable with the one obtained by Kwack (96, p. 382, equation (16)). He found that an increase of $1 billion in retained earnings by foreign affiliates of the U.S. companies in all industries results in a $135,000 increase in the flow of U.S. foreign direct investment for all industries.

A low estimated coefficient for the retained earnings may be explained as follows: foreign direct investment is a function of profit, interest rates, wage differentials, size of the market, availability of local capital, and many other variables, while retained earning, which is directly related to foreign investment, constitutes only a small portion of the stock of foreign direct investment.

With regard to the coefficients of the lags, an increase of $1 billion in the gross domestic product of the European Economic Community (6) in 1979, for example, results in an increase in the stock of foreign direct investment in EEC(6) in petroleum industry of approximately $28 million in 1980, $34 million in 1981, $37 million in 1982 and $29 million

in 1983, other things remain unchanged. The form of the weights is presented in Figure 5-1.

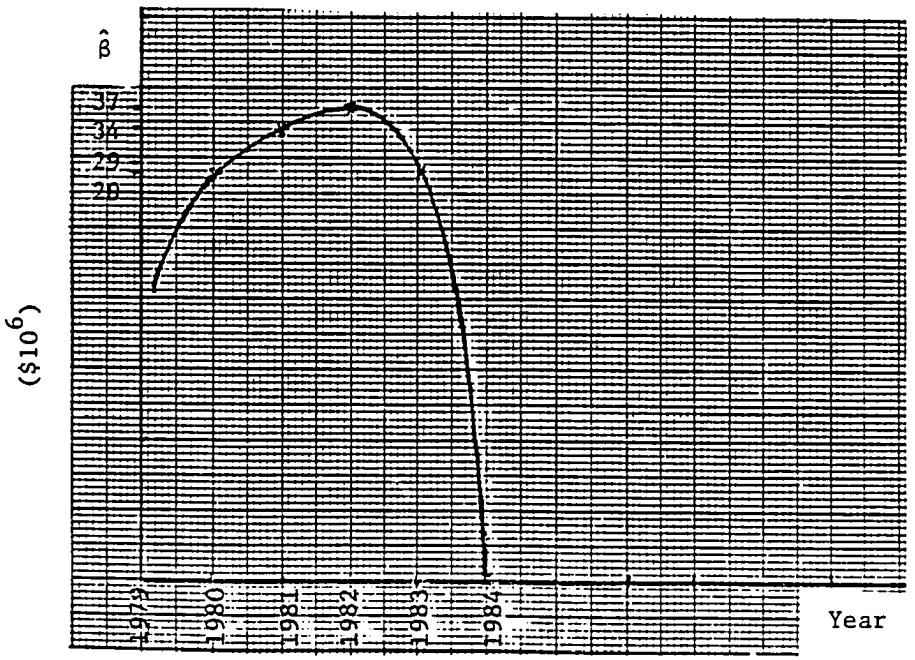

FIGURE 5-1

THE GEOMETRIC PRESENTATION OF LAG WEIGHTS OF $\hat{\beta}$

According to this model, the gross domestic product of the host countries which represent the size of the market have a positive relation with the stock of foreign direct investment in the petroleum industry. The change in the stock of foreign direct investment comes into effect one year after a change in the gross domestic product of the host nations, reaches its peak point three years later, and disappears after five years.

The size-of-market is considered to be one of the most important determinants of foreign direct investment. Theoretically, the size-of-market hypothesis is relied on the assumption that adequate market size

provides the advantages of economies of scale for the investors and attracts more technology and new investment. Also, as discussed in the theoretical part of this study, some theories of foreign direct investment, hypothesize that foreign direct investment occurs in a host country only when the market is sufficiently large. Scaperlanda and Mauer (142, 1969) in an empirical test on the effect of the size of the market, growth of the market and tariff discrimination on the flow of U.S. foreign direct investment in the EEC(6), conclude that the size-of-market is the sole determinant of U.S. foreign direct investment in the EEC(6) regardless of specification of the model and the time period. Lunn (100) in his empirical work on "Determinants of U.S. Direct Investment in the EEC(6)," and Schmitz and Bieri (144, 1972) in "EEC Tariffs and U.S. Direct Investment" support the importance and statistical significance of the size of the market as one of the factors affecting U.S. foreign direct investment, but maintain that it is not the only factor.

Tariff discrimination is also important in determining the flow of foreign direct investment in host countries. The tariff discrimination hypothesis is based on the assumption that an increase in tariffs raises the price of the products in the host country, making it difficult to export goods to that country and increasing production within the country. Therefore, foreign investors invest in--rather than export to--countries that have imposed restrictions on trade.

Among three alternative proxy variables for tariff discrimination, only TDV, which is the ratio of U.S. export to the EEC(6) to the export of EEC countries to each other, gives the theoretically expected sign and t-statistics greater than one, indicating that the tariff

discrimination variable adds to the explanatory power of the overall equation, but is not statistically significant. The result for equation (32) including TDV is reported in Table 5-2, equation (33). Equation (33) is corrected for serial correlation using the Cochrane-Orcutt iterative process. Imposition of tariffs by the members of European Economic Community presumably reduces U.S. export to the EEC and increases export within the EEC. In both cases, this leads to a negative relation between the changes in the stock of foreign direct investment in the EEC and changes in TDV, provided by equation (33) in Table 5-2. Adding a tariff discrimination variable to the simple ordinary least square estimation of the model, equation (23), results in equation (34). Equation (34) has a t-statistics which equals 2.18 for the coefficient of TDV, indicating that the estimated value of the coefficient of TDV is significantly different from zero at 5 percent level of significance, but DW gives an inconclusive result about the presence of autocorrelation in the model.

The results obtained in this study on tariff discrimination hypothesis support the empirical finding of Scaperlanda and Mauer (142) on a micro-data or on an industry level. Scaperlanda and Mauer found no significant relation between the tariff discrimination variable and the aggregated form of U.S. direct foreign investment in the EEC. The results obtained by Lunn (100) and Schmitz and Bieri (144) prove the contrary; however, the definition of the tariff discrimination variable for this study and the definitions used by Scaperlanda and Mauer differ from the definition applied by Lunn and Schmitz and Bieri.

Another explanatory variable tested in this model is the wage differential (WD6), which is specifically linked to the profitability of direct investment. The wage differential hypothesis is based on the assumption that the presence of a low wage rate in a host nation reduces the cost of production and leads to a higher profit for the foreign investors. A low cost of labor, if accompanied by availability of raw materials and/or other basic factors of production in a host nation, may encourage foreign companies to invest in that country and save transportation costs and take the advantage of low cost of labor and availability of raw materials. The wage differential hypothesis can explain the inducement of foreign direct investment in developing host nations better than in developed host countries. The effect of wage differential on U.S. foreign direct investment in the petroleum industry in the European Economic Community is tested, in this method, and the results are shown in equations (35) and (36) and reported in Tables 5-2 and 5-1, respectively. Both equations have a high R-squared (adjusted) value and the theoretically expected sign for the coefficient of WD6. In both equations, the t-statistics related to WD6 indicate that the estimated coefficient of WD6 is significantly different from zero.

The wage differential variable if included in the equation with the polynomial distributed lag, equation (35), produces unsatisfactory results for the coefficients of the lag value of GDPEC(6). The substantial change in the coefficients of the lag value of GDPEC(6) which results from adding WD6, signifies the presence of a high degree of multicollinearity in the equation. Adding WD6 to equation (23), in which

variables are estimated using simply ordinary least squares estimation, results in equation (36). Correcting this equation for the first order serial correlation gives equation (37) which is chosen as the best equation for explaining the effect of wage differential on foreign direct investment. The negative sign of the coefficient of WD6 indicates that a rise in the percentage change in the wage differential between the U.S. and the EEC(6) reduces U.S. foreign direct investment in the petroleum industry in the common market.

Empirical works concerning the determinants of foreign direct investment on a macro-level have found no statistically significant relation between wage differentials and U.S. foreign direct investment.

The result on the effect of wage differentials obtained in this study do not agree with the empirical works of Scaperlanda and Mauer (142). (Note: This study has tested the U.S. foreign direct investment on the macro-level.)

Growth of the host market is considered to be another factor affecting foreign direct investment. This hypothesis is based on the relation between the aggregate demand and stock of capital necessary to satisfy this demand. A rise in aggregate demand requires more capital; therefore, theoretically, a positive relation is expected between the growth of the market and the stock of capital.

Two proxy variables were selected to represent the growth of the European Economic Community: the first is the annual growth of the GDP of the EEC(6) and AGEC6, and the second is the percentage rate of change in the GDP of the EEC(6) and GEC6. Equations (38) and (39), reported in Table 5-2, represent the estimation of growth of the host

market. Both equations have high R-squared (adjusted) values and the theoretically expected signs for all coefficients, including the coefficients for AGEC6 and GEC6. The t-statistics for the coefficients of AGEC6 and GEC6 indicate that the estimated growth variable is significantly different from zero. Equations (38) and (39) are corrected for first order autocorrelation.

The estimated results for the growth of the host market provided in this study support the findings of Lunn (100), Schmitz and Bieri (144), but not the findings of Scaperlanda and Mauer (142).

In 1958, Belgium, West Germany, France, Italy, Luxembourg, and Netherlands formed the European Economic Community. The EEC implementation of a common market, external tariff, and internal free trade should have initiated a decrease in U.S. export to EEC and an increase in U.S. foreign direct investment in the EEC.

In this study two proxy variables, DUM58 and D5872, were selected to represent the impact of the formation of the EEC(6) on U.S. foreign direct investment in the EEC. The statistical results obtained are indicated by equations (40), (42), reported in Table 5-1 and (41), reported in Table 5-2. These equations present statistically insignificant estimations for the coefficients of DUM58 and D5872. These findings confirm the results obtained by Scaperlanda (135, 1967) and (136, 1968). Wallis (163) and Schmitz (143), on the other hand, claim that the formation of the EEC had a statistically significant effect on U.S. foreign direct investment in the EEC.

During the 1950s and early 1960s, the U.S. balance of payments changed from surplus to continuous deficit, and the U.S. was forced to

make policy changes to try to restore equilibrium in the balance of payments. For this reason, in 1965 the "Voluntary Balance of Payments" program was announced by Lyndon B. Johnson. This policy seemed to be ineffective. Therefore, in 1968 a "Mandatory Control Program" was imposed to restrict the outflow of U.S. direct investment. The effectiveness of these programs was tested using DUM65 and DUM68 as proxy variables representing the voluntary and mandatory control programs, respectively. The statistical results for the estimation of coefficients for DUM65 and DUM68 are given by equations (43) and (45), reported in Table 5-1, and equation (44), reported in Table 5-2. All equations give the expected signs for the coefficients of DUM65 and DUM68, but the t-statistics was very low indicating that the estimated coefficients were not significantly different from zero.

An alternative method was applied to examine the effectiveness of the control programs on the U.S. outflow of foreign direct investment. In the second method, the ratio of the stock of U.S. direct foreign investment in the EEC(6) for the petroleum industry (FIEC6P) over the stock of U.S. foreign investment in the petroleum industry in the rest of the world (FDIPR) was regressed on time variable. The results are shown in equations (46) and (47), reported in Table 5-3. These equations still resulted in a statistically insignificant relation between the stock of foreign investment and the restrictive policies. The t-statistics for both equations are greater than one, indicating that the two variables add to the explanatory power of the overall equations. The sign of the estimated coefficient for DUM65 is positive signifying an increase in the flow of U.S. direct investment to the EEC as a result

of the voluntary restraint program. This inverse effect of the voluntary restriction policy may have been caused by an immediate reaction by some investors who anticipated additional future restrictions on the outflow of the capital.

Equations (48), (49) and (50) represent the structural change in the U.S. foreign direct investment for all industries in the EEC(6) as a result of restrictive policies. The t-statistics for the coefficient of DUM68 are greater than one, indicating that this variable has some explanatory power but it was not significantly different from zero. The t-statistics for the coefficient of DUM65 in equation (49) indicate that the estimated parameter is significantly different from zero at 5 percent level of significance. The positive sign of the coefficient of DUM65 again shows the reverse effect of voluntary control program (persuading, instead of discouraging U.S. investors to invest in foreign countries).

The results obtained on the effect of voluntary control program support the finding of Kwack (96), who found a positive relation between the flow of U.S. direct investment and the dummy variable representing the voluntary control program. Scaperlanda (137) concluded that the voluntary program had less effect than the mandatory program on the outflow of U.S. direct investment. Willett (170) found that control programs were very effective. His findings do not agree with the results of this study, but his procedure was different from the one applied here. Willett tested the effect of the control program on the level of plant and equipment expenditures in Europe. He claims that in 1968 the

total expenditure on plant and equipment was up to 20 percent less than the expected total.

Most empirical studies in this area have taken a macro-economic approach (i.e., U.S. foreign direct investment in all industries) to the problem of foreign direct investment. The present study is concerned primarily with the micro-economic approach (i.e., U.S. foreign direct investment in the petroleum industry in the EEC(6)). Nonetheless, comparisons of the results obtained for U.S. foreign direct investment in the petroleum industry in EEC(6) with the results obtained for U.S. foreign direct investment in manufacturing and all industries in the EEC(6) and the EEC(9) benefit the study.

Additional detailed analysis of the kind already performed for U.S. foreign direct investment in the petroleum industry in the EEC(6) would be extremely time consuming if applied for the other types of investment. The scope and limitation of this study does not justify such analysis; therefore, only simple linear regression techniques are applied for estimation of the remaining equations.

The statistical results for manufacturing industries in the EEC(6), all industries in the EEC(6), the petroleum industry in the EEC(9), manufacturing industry in the EEC(9), and all industries in the EEC(9) are reported in Tables 5-4 to 5-8 and equations 54 through 85.

All equations meet the criteria of R-squared (adjusted) values and have the theoretically expected signs for the three basic explanatory variables (the dollar value of output, retained earning, and the size of the market). The estimated coefficients of these three variables in all equations have t-statistics which indicate that they differ significantly

from zero. The results obtained for these three variables are in agreement with the results previously reported for the petroleum industry in the EEC(6), except that a different lag structure emerged for the size of the market in some of the new equations.

With regard to the tariff discrimination hypothesis and the wage differential hypothesis, in both sets of equations for manufacturing and all industries in the EEC(6), the t-statistics indicate that the estimated parameters are significantly different from zero, while the estimated results for these two variables in the EEC(9) for manufacturing and all industries provide t-statistics indicating that the estimated parameters are not significantly different from zero. The reason for this inconsistency may be due to improper form of the lag and high multicollinearity present among the variables.

The estimated coefficients for the rest of the variables were not significantly different from zero, according to their t-statistics. Further research might be necessary to find appropriate lag structures and/or different forms of equations which would best fit the model.

In conclusion, the empirical results of the present study indicate that the statistical model based on profit maximization advanced in this chapter can identify the determinants of the U.S. direct investment. The results of estimation of this model are summarized below:

First, U.S. direct investment in the petroleum industry in the EEC(6) was found to depend on the level of output produced by the affiliates of U.S. companies in the EEC(6), the U.S. interest rate, retained earning by affiliates of the U.S. companies, and the size of the host market.

Second, among many variables tested in this model, tariff discrimination, wage differential, and growth of the host market were found important in determining U.S. foreign direct investment in the petroleum industry in the EEC(6). Although, policy variables such as the formation of the European Economic Community, voluntary and mandatory control programs, and growth of the home market turned out to be statistically insignificant, all those variables added to the explanatory power of the overall equations.

Third, it has been shown that if voluntary and mandatory control programs had any effect on restraining the flow of U.S. direct investment to EEC, the mandatory control program had greater effect.

Fourth, change in the size of the host market was found to affect U.S. foreign direct investment with lag structure. This effect was not completed within one time period, but was distributed over several time periods.

Fifth, a similar test which used a simple linear regression technique only on the manufacturing and "all industries" indicated the importance of variables such as total output produced by the affiliates of the U.S. companies in the EEC, the U.S. interest rate, the retained earning by the affiliates of U.S. companies in the EEC and the size of the host countries in determination of U.S. direct investment in manufacturing and "all industries in EEC." More extensive research and perhaps more time series data are required to find better estimation technique for more satisfactory results for manufacturing industry and all industries.

TABLE 5-1

U.S. Foreign Direct Investment in Petroleum Industry in the EEC (6)

Equation	Method	Dependent Variables	Constant Terms	SPEC6D	REEC6P	GDPEC2	TDV	DUMTD
23	OLSQ	FIEC6P	-1016.66 (-7.38)	0.199644 (2.25)	1.04455 (6.18)	7.01164 (11.04)		
24	CORC	FIEC6P	179.268 (0.26)	0.479654 (4.38)	1.33437 (9.38)	3.55887 (3.73)		
34	OLSQ	FIEC6P	-349.904 (-1.06)	0.272175 (3.09)	1.13088 (7.03)	5.91440 (7.71)	-1232.04 (-2.18)	
53	OLSQ	FIEC6P	-968.193 (-7.07)	0.181712 (2.09)	1.02009 (6.20)	7.13717 (11.44)		-404.193 (-1.49)
36	OLSQ	FIEC6P	662.951 (2.52)	0.149517 (2.82)	1.06062 (10.63)	6.10861 (15.34)		
37	CORC	FIEC6P	575.008 (2.65)	0.128224 (3.10)	1.03046 (10.94)	6.32530 (19.22)		
40	CORC	FIEC6P	-1.31069 (-0.0020)	0.483250 (4.35)	1.32924 (9.11)	3.66990 (3.77)		
42	OLSQ	FIEC6P	-1014.26 (-7.48)	0.145777 (1.48)	1.00552 (5.95)	7.34148 (10.69)		
43	OLSQ	FIEC6P	-1030.37 (-7.22)	0.181823 (1.88)	1.03397 (6.03)	7.13513 (10.31)		
45	OLSQ	FIEC6P	-1039.35 (-7.17)	0.178652 (1.85)	1.03737 (6.09)	7.16088 (10.33)		
52	OLSQ	FIEC6P	-954.011 (-6.42)	0.212730 (2.40)	1.02873 (6.11)	6.92997 (10.93)		

TABLE 5-1 (continued)

Equation	WD6	DUM58	D5872	DUM65	DUM68	GUS	DW	$\bar{R}^2$	F	N
23							1.0821	0.992	(3,24) 1256.09	28
24							2.21	0.995	(3,23) 1830.14	27
34							1.19	0.993	(4,23) 1101.95	28
53							1.32	0.993	(4,23) 1000.85	28
36	-919.288 (-6.70)						2.55	0.997	(4,23) 2703.49	28
37	-896.742 (-8.26)						2.04	0.998	(4,22) 2900.75	27
40		48.8421 (0.31)					2.16	0.994	(4,22) 1316.84	27
42			-96.6457 (-1.23)				1.32	0.993	(4,23) 972.611	28
43				7.13513 (-0.56)			1.13	0.992	(4,23) 924.331	28
45					-88.98 (-0.64)		1.16	0.992	(4,23) 928.344	28
52						-1493.72 (-1.02)	0.98	0.993	(4,23) 953.34	28

TABLE 5-2

U.S. Foreign Direct Investment in Petroleum Industry in the EEC (6)
Polynomial Distributed Lag Model

Equation	Method	Dependent Variables	Constant Terms	SPEC6D	REEC6P	GDPEC6 (t-1)	GDPEC6 (t-2)	GDPEC6 (t-3)
32	PDL (4,4,2)	FIEC6P	-1200.81 (-12.16)	0.156120 (2.48)	0.448474 (3.39)	28.0412 (3.42)	34.04841 (4.28)	37.37806 (5.14)
33	PDLCORC (4,4,2)	FIEC6P	-829.163 (-3.04)	0.222341 (2.98)	0.480689 (3.49)	51.81528	57.24498	57.7424
35	PDLCORC (4,4,2)	FIEC6P	-265.978 (-0.96)	0.130193 (3.02)	0.653439 (5.0)	-4.521312	0.9294	7.321392
41	PDL (4,4,2)	FIEC6P	-1210.04 (-11.98)	0.123200 (1.54)	0.447556 (3.33)	16.15764	22.36254	26.91254
44	PDL (4,4,2)	FIEC6P	-1235.26 (-11.0156)	0.128219 (1.69)	0.460502 (3.40)	17.82112	24.00843	28.45128
38	PDLCORC (4,4,2)	FIEC6P	-1214.96 (-19.83)	0.154182 (3.94)	0.2746 (2.23)	85.70232	99.4581	89.65692
39	PDLCORC (4,4,2)	FIEC6P	-1274.52 (-19.38)	0.157383 (3.86)	0.346084 (2.87)	66.44808	72.43455	72.31808
51	PDL (4,5,2)	FIEC6P	-1305.42 (-15.11)	0.088568 (1.64)	0.608232 (4.86)	61.897	67.61952	70.9914

TABLE 5-2 (Continued)

Equation	GDPEC6 (t-4)	GDPEC6 (t-5)	TDV	WD6	D5872	DUM68	AGEC6	GEC6	$\bar{R}^2$	F	DW	N
32	28.99908 (6.04)								0.997	(5,20) 2353.80	2.06	26
33	42.3224		-605.714 (-1.57)						0.997	(6,18) 2002.95	2.04	25
35	8.922354			-488.843 (-3.60)					0.998	(6,18) 2986.21	1.88	25
41	22.04568				-37.4557 (-0.68)				0.997	(6,19) 1909.17	2.01	26
44	23.12377					-57.5033 (-0.68)			0.997	(6,19) 1909.06	2.06	26
38	64.33938						1.89186 (3.28)		0.997	(6,18) 2458.69	2.01	25
39	52.65459							1112.20 (3.14)	0.997	(6,18) 2481.76	2.07	25
51	65.31232	43.88232							0.997	(5,20) 2884.21	1.74	26

TABLE 5-3

Structural Change in Trend of U.S. Foreign Direct Investment in the EEC (6)

Equation	Method	Dependent Variables	Constant Term	TIME	TIME2	DUM58	DUM65	DUM68	$\bar{R}^2$	N
46	OLSQ	RFDJP	0.063888 (8.55)		0.000214 (12.47)		0.01332 (1.05)		0.85	30
47	CORC	RFDJP	-0.098879 (-1.82)	0.19209 (3.57)	-0.000258 (-2.03)	-0.00734 (-1.31)		-0.00734 (-1.31)	0.99	29
48	CORC	RFDI	0.14451 (2.75)		0.000130 (2.58)	-0.001119 (-0.125)			0.985	29
49	OLSQ	RFDI	0.037251 (4.41)	0.0047423 (3.51)	0.000098 (2.35)		0.013178 (1.74)		0.965	30
50	CORC	RFDI	-0.098872 (-1.82)	0.019209 (3.5)	-0.000258 (-2.03)			-0.007339 (-1.30)	0.989	29

TABLE 5-3 (Continued)

Equation	F	DW
46	(2,27) 78.6	0.76
47	(3,25) 842.10	1.74
48	(2,26) 941.885	1.45
49	(3,26) 248.4	0.47
50	(3,25) 842.095	1.75

TABLE 5-4

U.S. Foreign Direct Investment in Manufacturing in the EEC (6)

Equation	Method	Dependent Variables	Constant Terms	SMEC6D	REEC6M	GCPEC2	GDPEC3	TDV	WD6
54	CORC	FIEC6M	-2359.02 (-3.25)	0.751516 (4.56)	2.19458 (5.81)	11.3953 (3.63)			
55	CORC	FIEC6M	-2922.43 (-4.68)	0.503341 (3.01)	2.68343 (8.91)		15.3998 (5.03)		
56	CORC	FIEC6M	-1336.76 (-1.10)	0.735523 (4.58)	2.33818 (6.25)	10.3596 (3.19)		-2208.51 (-1.06)	
57	CORC	FIEC6M	-163.515 (-0.123)	0.283493 (1.61)	2.67959 (9.74)		16.6819 (6.06)		-1798.19 (-2.26)
58	CORC	FIEC6M	-2370.86 (-3.15)	0.757704 (4.43)	2.20273 (5.59)	11.2172 (3.33)			
59	CORC	FIEC6M	-2437.15 (-3.20)	0.828445 (4.62)	2.25539 (5.69)	10.3203 (3.08)			
60	CORC	FIEC6M	-2277.24 (-3.05)	0.775317 (4.21)	2.26844 (5.86)	10.8265 (3.12)			
61	CORC	FIEC6M	-3074.44 (-4.46)	0.454813 (2.40)	2.67937 (8.74)		16.30 (4.68)		
62	CORC	FIEC6M	-2883.65 (-3.46)	0.622211 (3.29)	2.01466 (4.59)	13.7196 (3.79)			
63	CORC	FIEC6M	-2789.67 (-3.36)	0.661561 (3.78)	2.14360 (5.35)	13.0190 (3.83)			

TABLE 5-4 (Continued)

Equation	DUM58	D5872	DUM65	DUM68	AGEC6	GEC6	$\bar{R}^2$	F	DW	N
54							0.994	(3,23) 1616.11	1.81	27
55							0.995	(3,23) 1897.72	1.93	27
56							0.994	(4,22) 1212.80	1.83	27
57							0.995	(4,22) 1665.87	2.05	27
58	72.36 (0.16)						0.994	(4,22) 1660.76	1.81	27
59		346.877 (0.97)					0.994	(4,22) 1207.71	1.80	27
60			182.010 (0.48)				0.994	(4,22) 1169.31	1.82	27
61				-250.197 (-0.59)			0.995	(4,22) 1382.69	1.93	27
62					3.57532 (0.99)		0.994	(4,22) 1203.51	1.97	27
63						1788.36 (0.78)	0.994	(4,22) 1179.98	1.94	27

TABLE 5-5

U.S. Foreign Direct Investment in "All Industries" in the EEC (6)

Equation	Method	Dependent Variables	Constant Term	STEC6D	REEC6	GDPEC2	TDV	WD6	D5872
64	CORC	FIEC6	-4260.55 (-3.79)	0.811842 (5.88)	1.52724 (5.19)	18.9070 (4.39)			
65	CORC	FIEC6	-1940.25 (-1.14)	0.759324 (6.03)	1.65638 (5.96)	17.7092 (4.22)	-5635.79 (-1.86)		
66	CORC	FIEC6	142.066 (0.056)	0.662518 (4.83)	1.56161 (5.74)	19.4303 (5.02)		-2652.57 (-1.97)	
67	CORC	FIEC6	-4527.69 (-3.80)	0.837176 (5.87)	1.56165 (5.17)	18.4832 (4.20)			381.29 (0.71)
68	CORC	FIEC6	-4310.07 (-4.11)	0.816073 (5.53)	1.53846 (5.14)	18.8429 (4.16)			
69	CORC	FIEC6	-4919.57 (-4.65)	0.689684 (4.25)	1.48205 (5.01)	22.3657 (4.76)			

TABLE 5-5 (Continued)

Equation	DUM65	AGEC6	N	DW	F	$\bar{R}^2$
64			27	2.06	(3,23) 2056.70	0.995
65			27	2.09	(4,22) 1658.06	0.995
66			27	2.03	(4,22) 1722.52	0.995
67			27	2.09	(4,22) 1509.40	0.995
68	237.647 (0.43)		27	2.11	(4,22) 1485.50	0.995
69		3.22473 (0.70)	27	2.21	(4,22) 1486.65	0.995

TABLE 5-6

U.S. Foreign Direct Investment in Petroleum Industry in the EEC (9)

Equation	Method	Dependent Variables	Constant Terms	SPEC9D	REEC9P	GDPE92	GDPE93	TDV9	WD9
70	CORC	FIEC9P	-2068.73 (-5.88)	0.748739 (7.88)	1.55764 (12.32)		8.30589 (7.82)		
71	CORC	FIEC9P	-496.127 (-0.59)	0.841331 (8.40)	1.55916 (13.18)		6.19167 (4.30)	-2628.60 (-2.03)	
72	CORC	FIEC9P	-492.872 (-0.79)	0.688281 (10.02)	1.59655 (13.91)		7.75640 (9.37)		-850.411 (-3.00)
73	CORC	FIEC9P	-2063.69 (-5.72)	0.738410 (6.93)	1.55690 (12.01)		8.31944 (7.69)		
74	CORC	FIEC9P	-2303.56 (-7.18)	0.662782 (7.06)	1.60079 (12.61)		9.22175 (8.98)		
75	CORC	FIEC9P	-2203.41 (-5.85)	0.705360 (6.66)	1.57272 (12.22)		8.78690 (7.44)		
76	CORC	FIEC9P	-1881.95 (-6.28)	0.845862 (12.37)	1.23254 (16.39)	7.10309 (9.26)			

TABLE 5-6 (Continued)

Equation	DUM73	DUM65	DUM68	AG9	N	DW	F	$\bar{R}^2$
70					26	2.07	(3,22) 2100.03	0.995
71					26	2.01	(4,21) 1799.98	0.996
72					26	2.10	(4,21) 2011.62	0.996
73	58.8557 (0.21)				26	2.06	(4,21) 1506.43	0.995
74		-195.650 (-1.35)			26	2.11	(4,21) 1605.45	0.995
75			-169.158 (-0.73)		26	2.09	(4,21) 1540.63	0.995
76				1.02948 (1.32)	27	2.01	(4,22) 4677.17	0.997

TABLE 5-7

U.S. Foreign Direct Investment in Manufacturing Industry in the EEC (9)

Equation	Method	Dependent Variables	Constant Terms	SMEC9D	REEC9M	GDPE93	TDV9	DUM65	AG9
77	CORC	FIEC9M	-5988.47 (-4.81)	0.456663 (2.29)	3.27441 (10.39)	21.9545 (5.00)			
78	CORC	FIEC9M	-1569.01 (-0.52)	0.828515 (4.06)	2.93545 (7.34)	11.0932 (2.18)	-5452.84 (-1.11)		
79	CORC	FIEC9M	-4081.89 (-2.53)	0.880719 (3.74)	2.86748 (7.11)	13.2191 (2.43)		451.350 (0.66)	
80	CORC	FIEC9M	-5935.59 (-3.88)	0.594273 (2.81)	2.58173 (5.95)	19.6673 (4.05)			7.92033 (1.40)

TABLE 5-7 (Continued)

Equation	N	DW	F	$\bar{R}^2$
77	26	1.86	(3,22) 1276.76	0.993
78	26	1.80	(4,21) 753.98	0.992
79	26	1.81	(4,21) 727.418	0.991
80	26	1.96	(4,21) 758.163	0.992

TABLE 5-8

U.S. Foreign Direct Investment in "All Industries" in the EEC (9)

Equation	Method	Dependent Variables	Constant Terms	STEC9D	REEC9	GDPE92	GDPE93	TDV9	WD9
81	CORC	FIEC9	-9944.30 (-5.39)	0.694916 (4.03)	3.00702 (12.95)		33.3294 (5.18)		
82	CORC	FIEC9	-990.349 (-0.22)	1.19150 (6.08)	2.74227 (8.08)	11.2621 (1.33)		-9429.33 (-1.22)	
83	CORC	FIEC9	-5487.87 (-1.30)	0.592899 (3.37)	3.01493 (13.18)		33.4277 (5.42)		-2566.12 (-1.21)
84	CORC	FIEC9	-9824.07 (-4.97)	0.711670 (3.59)	3.0193 (12.71)		32.6578 (4.42)		
85	CORC	FIEC9	-10211.0 (-4.98)	0.664482 (3.34)	3.00195 (12.66)		34.5087 (4.64)		

TABLE 5-8 (Continued)

Equation	DUM65	DUM68	N	DW	F	$\bar{R}^2$
81			26	1.86	(3,22) 996.10	0.995
82			27	1.76	(4,22) 1049.03	0.993
83			26	1.87	(4,21) 1442.43	0.995
84	240.404 (0.27)		26	1.88	(4,21) 1355.58	0.995
85		-451.629 (-0.40)	26	1.87	(4,21) 1361.76	0.995

TABLE (5-9)

DEFINITION OF VARIABLES FOR ALL EQUATIONS

Dependent Variable	Definition
IEC6P	Flow and retained earning of foreign (U.S.) direct investment in the EEC(6) for the petroleum industry
FIEC6P	Stock of foreign direct investment in the EEC(6) for the petroleum industry
FIEC9P	Stock of foreign direct investment in the EEC(9) for the petroleum industry
FIEC6M	Stock of foreign direct investment in the EEC(6) for manufacturing industry
FIEC6	Stock of foreign direct investment in the EEC(6) for all industries
FIEC9M	Stock of foreign direct investment in the EEC(9) in manufacturing industry
FIEC9	Stock of foreign direct investment in the EEC(9) for all industries
FDIPR	Stock of U.S. foreign direct investment in the petroleum industry in the rest of the world, defined as: FDIRP = FDIP - FIEC6P where FDIP is the stock of U.S. foreign direct investment in all countries in the petroleum industry.
FDIMR	Stock of U.S. foreign direct investment in manufacturing industry in the rest of the world, defined as: FDIMR = FDIM - FIEC6M where FDIM is the stock of U.S. foreign direct investment in all countries in manufacturing industry
RFDI	RFDI = FIEC6/FDIR
RFDIM	RFDIM = FIEC6M/FDIMR
RFDIP	RFDIP = FIEC6P/FDIPR

TABLE (5-9)--(Continued)

Independent Variable	Definition
FDT1	Stock of foreign direct investment in the EEC(6) for the petroleum industry with one period lag
GU	Implicit price deflator for the U.S. GNP (1972 = 100)
GU1	Implicit price deflator for the U.S. GNP (1972 = 100) with one period lag
GUE	Change in the U.S. GNP price deflator, defined as GUE = (GU-GU1)/GU
REEC6P	U.S. nonfinancial corporations' retained earning in the EEC(6) for the petroleum industry
RU	Long term U.S. government bond yields
SPEC6	Total sales by majority owned foreign affiliates of U.S. companies in the EEC(6) for the petroleum industry
SPEC6D	SPEC6 deflated, difined as: SPEC6D = SPEC6/(RU-GUE)
GDPEC6	Dollar value of the Gross Domestic Product of the six members of the European Economic Community in 1972 prices
GEC6	Percentage change in the GDP of the EEC(6), defined as: GEC6 = [GDPEC6 - GDPEC6(-1)]/GDPEC6
AGEC6	Annual change in GDPEC6, defined as: AGEC6 = GDPEC6 - GDPEC6(-1)
GUS	Percentage change in the U.S. GNP, defined as: GUS = [GNPUS - GNPUS(-1)]/GNPUS
AGUS	Annual growth of the U.S. GNP, defined as: AGUS = (GNPUS - GNPUS1)
USEEC6	U.S. export to the EEC(6)
EC6TEC6	Export of EEC(6) members to other EEC(6) members

TABLE (5-9)--(Continued)

Independent Variable	Definition
TDV	Proxy variable for the tariff discrimination rate defined as: TDV = (USEEC6/EC6TEC6)
TDVC	Change in the Tariff discrimination rate, defined as: TDVC = TDV - TDV(-1)
DUM58	Dummy variable to identify the impact of the formation of the EEC(6) on the flow of foreign direct investment to the EEC(6), which takes the value of zero for the (1950-1957) period and the value of one for the (1958-1979) period
DUMTD	Effect of tariff discrimination on the flow of foreign direct investment after the formation of the EEC(6), defined as: DUMTD = DUM58 * TDV
T	Time
T2	Time square
REEC9M	U.S. nonfinancial corporations' retained earning in the EEC(9) for manufacturing industry
REEC9	U.S. nonfinancial corporations' retained earning in the EEC(9) for all industries.
REEC9P	U.S. nonfinancial corporations' retained earning in the EEC(9) for the petroleum industry
REEC6M	U.S. nonfinancial corporations' retained earning in the EEC(6) for manufacturing industry
REEC6	U.S. nonfinancial corporations retained earning in the EEC(6) for all industries
SMEC6	Total sales by majority owned foreign affiliates of U.S. companies in the EEC(6) for manufacturing industries
STEC6	Total sales by majority owned foreign affiliates of U.S. companies in the EEC(6) for all industries

TABLE (5-9)--(Continued)

Independent Variable	Definition
STEC6D	STEC6 deflated, defined as: STEC6D = STEC6/(RU-GUE)
SPEC9	Total sales by majority owned foreign affiliates of U.S. companies in the EEC(9) for the petroleum industry
SPEC9D	SPEC9 deflated, defined as: SPEC9D = SPEC9/(RU-GUE)
SMEC9	Total sales by majority owned foreign affiliates of U.S. companies in the EEC(9) for manufacturing industry
SMEC9D	SMEC9 deflated, defined as: SMEC9D = SMEC9/(RU-GUE)
STEC9	Total sales by majority owned foreign affiliates of U.S. companies in the EEC(9) for all industries
STEC9D	STEC9 deflated, defined as: STEC9D = STEC9/(RU-GUE)
USEEC9	U.S. export to the EEC(9)
EC9TEC9	Export of EEC(9) members to other EEC(9) members
TDV9	Tariff discrimination rate for the EEC9, defined as: TDV9 = (USEEC9/EC9TEC9)
GDPEC9	The dollar value of the GDP for the EEC(9) in 1972 prices
DUM73	Dummy variable indicating the impact of the formation of the EEC(9) on the flow of foreign direct investment to the EEC(9), which takes the value of zero for the 1950-1972 period and the value of one for the 1973-1979.

TABLE (5-9)--(Continued)

Independent Variable	Definition
DUMTD9	The tariff discrimination rate, indicating the impact of tariff on the flow of direct foreign investment after 1973 in the EEC(9), defined as: DUMTD9 = DUM73 * TDV9
D5872	Dummy variable to identify the impact of the formation of the EEC(6) on foreign direct investment for the 1958-1972 period
DUM65	Dummy variable to describe the effect of the "Voluntary Restraint Program" on direct foreign investment,which takes the value of zero for the 1950-1964 and 1970-1979 periods and the value of one for the 1965-1969 period.
DUM68	Dummy variable reflecting the impact of the "Mandatory Control Program" on the flow of foreign direct investment, which takes the value of zero for the 1950-1967 and 1970-1979 periods and the value of one for the 1968-1969 period
G9	Percentage change in the GPD of the EEC(9), defined as: G9 = [GDPEC9 - GDPEC9(-1)]/GDPEC9
AG9	Annual change in GDPEC9, defined as: AG9 = [GDPEC9 - GDPEC9(-1)]
WUS	Average gross hourly earnings in private non-agricultural industries in the U.S.
WEEC(6)	Average gross hourly earning in private non-agricultural industries in the EEC(6) converted into 1972 dollars
WD6	The ratio of the differences between WUS and WEEC(6) divided by WEEC(6), defined as: WD6 = [WUS - WEEC(6)]/WEEC(6)

CHAPTER VI

SUMMARY AND CONCLUSIONS

This study has provided historical and statistical evidence that many quantitative and non-quantitative socio-economic and political factors are responsible for the flow and structure of foreign direct investment. In addition, this study addressed the questions of MNCs' efficiency and their role in the economic development of home and host nations.

Multinational Corporations and International Capital Movements

Historical Background

A historical review of capital movements before WWI has shown that during that time the flow of capital was mostly from colonial powers to their overseas territories. There is little historical data on the nature and motivation of capital movements; however, the available information indicates that the basic objectives were extraction of raw materials and primary products from colonized countries. The United Kingdom was considered a dominant power in the international market during the 19th century and early 20th century. The Great Depression, which altered the position of the United Kingdom in the world market, may be regarded as the most important factor in causing structural change in capital movement during the first half of the century.

Major Sources of Capital Movement

The major sources of international capital movement have been international institutions (multilateral), aid from developed nations to less developed countries (bilateral), multinational corporations (private) and, more recently, the governments of the rich oil producing countries (OPEC).

The Motive for Direct Foreign Investment

Under perfect competition, a single factor--such as a difference in the cost of capital, cheap raw materials, etc.,--may not necessarily justify direct foreign investment abroad. However, many factors in an imperfect market simultaneously determine the flow of direct foreign investment. Some economists classify the motivating factors created in an imperfect market as "defensive/aggressive."

The diversification and spread of foreign direct investment may be attributed to the MNCs' risk minimization strategy. A multinational corporation's strategy may change from aggressive to defensive when it reaches a certain level of growth.

The Emergence of U.S. Multinational Corporations

Before WWI, the U.S. share of foreign direct investment in the international market was relatively low compared to the European share of the market. U.S. foreign direct investment was mostly concentrated in neighboring Canada and Mexico. At that time, transportation and communication facilities were the major determinants of U.S. investment abroad. Another important factor was the stage of development of the host nations. U.S. investment in less developed countries was generally

resource oriented, while investment in developed nations was market oriented.

During this early stage of MNCs' development, the young and unexperienced multinational enterprises were uncertain about new markets and needed sufficient technology and capital to cope with their rival competitors in host nations. Therefore, a large number of joint ventures were established among U.S. corporations and foreign corporations to reduce the risk involved and to help transfer knowledge and technology.

Although the number of multinational corporations expanded rapidly during this period, events such as the war, anti-trust law, the Great Depression, the expropriation of U.S. properties, and increases in regulations against U.S. affiliates in host countries caused a set back for some of the U.S. industries. During 1929 and the 1930s, U.S. investors experienced great losses due to poor economic conditions at home and abroad.

After WWII, a great number of international organizations and private institutions, mostly supported by the U.S. government, were established. These institutions--plus the European Recovery Program, which was intended to combat Soviet aggression, help developing countries, and help fulfill U.S. long-term economic objectives--persuaded U.S. investors to take a greater role in the international markets.

The U.S. government policy of promoting U.S. private investment, initially intended to support investment in European countries, was expanded to include support of investment to the less developed countries in the early 1950s. This policy and the new wave of multinational corporations, during the early 1950s, may have been partly caused by the

economic boom at home and a continuous surplus in the U.S. balance of payments.

The Korean War caused the U.S. to concentrate its economic aid in military projects, which expanded U.S. direct investment in petroleum and mining industries around the world.

During the late 1950s and early 1960s, the U.S. balance of payments turned from surplus to deficit. Therefore, the Voluntary and Mandatory Control programs of 1965 and 1968 were imposed by the U.S. government to reduce the flow of U.S. direct foreign investment and to improve the balance of payments.

The Historical Perspective of Multinational Oil Companies

The first recorded direct foreign investment in the petroleum industry was made by Standard Oil of Ohio in 1879. From the beginning oil companies operated under monopoly or oligopoly conditions. The Standard Oil Trust was formally established in 1882. As a result of antitrust law, its dissolution was ordered in 1911, but this move by the government did not create competition among the Standard Oil companies. Some of the important factors which influenced foreign direct investment in the petroleum industry in the early stage of development of multinational oil companies included: a high demand for U.S. refined products and cheap crude oil; competition with the Russian oil industry; and the special attention given by the U.S. government to the petroleum industry.

After WWI, the world wide search for oil intensified. The U.S. oil companies--despite the anti-trust law--obtained monopolistic

concession from the U.S. government for their operation at home and abroad. In many cases, the U.S. government helped the oil companies obtain concessions from foreign governments, especially in China and the Middle Eastern countries, for exploration for crude oil or for the establishment of refineries.

A few multinational oil enterprises were able to gain control over a substantial portion of the world oil market by using strategies such as vertical integration, a market share approach, and geographical and resource diversification.

The damages to the oil companies from WWII, especially in Eastern Europe were substantial, but the companies were able to offset their losses and expand their activities. U.S. government assistance, a high demand for oil during and after the war, and the fear of Russian expansion were the most important factors for causing expansion of foreign direct investment in the petroleum industry after WWII.

Two major events which markedly affected the structure of U.S. foreign direct investment in the petroleum industry were the establishment of Organization of Petroleum Exporting Countries (OPEC), and the OPEC oil embargo.

Economic Impact of Foreign Direct Investment

Direct foreign investment can contribute to the growth and economic development of the host countries under proper conditions. These conditions include: 1) proper absorption capacity by the host country--the recipient country must have an adequate banking system, sufficient technical knowledge, an appropriate quantity and quality of

labor force, and a benevolent government. Otherwise, the imported capital may be wasted, misplaced, or repatriated to the donor country. 2) Proper labor conditions in the host nation--a country with an abundant labor force and scarce capital requires "labor intensive" technology in order to avoid the problem of mass unemployment; a relatively capital abundant country needs "capital intensive" technology and skilled labor to utilize its resources efficiently. 3) Sufficient local capital and competitive local entrepreneur--the imported capital should motivate local savings and investments; the host government should incorporate economic policies under which the domestic industries can compete with the advanced imported industries. 4) The use of capital for import substitution or export development purposes--if imported capital is used in import substitution industries, its spread effect or economic advantage is greater to the host nations that if used in export development of primary industries.

MNCs' Performance and Policies

Efficiency of Multinational Corporations

Multinational corporations are said to contribute to an optimal allocation of resources because of their large size. However, many economists have questioned the efficiency of multinational enterprises because of the deviation of these companies' performance from perfect competition. Large size has been proved by some economists to be insufficient proof of efficiency.

Competition versus Monopoly; the Special Case of Oil Companies

Multinational oil companies throughout history have tried to suppress competition and maintain their superiority through creating oligopolistic market conditions in the international market. Some of the strategies they have used to accomplish this are: 1) diversification in alternative sources of energy, which gives the companies potential monopolistic power over different sources of energy, even during a shortage in one source of energy; 2) vertical integration through which control over production, processing, transportation, and marketing are provided; 3) mergers and acquisitions which allow sharing the burden of providing the knowledge and finances necessary to beat the competition in the home and host countries; 4) interrelations and partnerships which harmonize the domestic and international activities of different companies; 5) geographical diversification, which avoids the risk of shortage in production as a result of political instability in one country or reduction in production in one area, and 6) finally, the market share approach, which eliminates unnecessary competition among different companies.

Intra-Company Transfer Pricing

Intra-company transfer pricing is usually applied by multinational corporations to pay less taxes to the home and to the host countries, or it may be used to transfer extra-legal funds from one subsidiary to another. It is more possible for oil companies to use transfer pricing than for other industries, because oil companies are more vertically integrated. The beneficiaries of transfer pricing are

usually the "tax haven" countries. Two methods have been recommended for eliminating transfer pricing: first, to impose lump sum tariffs and taxes, and second, to use the arm's length standard or a checking system which monitors prices. It has been shown that each method has its own weakness and limitations.

Foreign Direct Investment and Diffusion of Technology in LDCs

It has been demonstrated that the performance and policies of MNCs in less developed countries are different than the performance and policies in developed nations. Due to the existence of excessive unskilled labor force and other economic and political factors, less developed countries require large amounts of capital and labor intensive technology to induce economic development. The study presented some of the socio-economic and political factors that discourage multinational corporations from investing in the LDCs.

A Comparative Analysis of Foreign Direct Investment in Australia, France and Mexico

It will be remembered that an empirical study by the Business International Corporation which compared the performance of foreign owned companies in Australia, France, and Mexico to the performance of local companies in those countries concluded that the U.S. owned affiliates outperformed the local companies in export, Research and Development (R&D), productivity, rate of profit, etc. It was concluded that in advanced countries, as compared to the LDCs, the rate of growth in export was higher, foreign investments were mostly market oriented (rather than resource oriented), the rate of R&D was higher, the

increase in foreign assets was higher, projects were mostly long-run, and the rate of profit was lower. U.S. multinational corporation production constituted only a small portion of the GDP of these countries and the growth of foreign sector was not indicative of growth in the overall economy of the host nations.

MNCs' Experience in Yugoslavia

Observation of the role of multinational corporations in Yugoslavia indicates that even when foreign sectors constituted a great portion of the country's economy, the resulting growth of the foreign sectors failed to generate a sustained economic growth and development for Yugoslavia.

Host Countries' Responses to MNCs

MNCs and Developed Nations

The European response to the operation of U.S. multinational enterprises differed from country to country. Belgium was entirely in favor of foreign investment; Italy's policy was moderate; Germany and Great Britain applied limited restrictions; and France applied more complex policies toward foreign investors. Countries that applied moderate or restrictive policies were mostly concerned that the key industries remain in the control of local enterprises. These countries applied policies such as foreign exchange control, endorsement of local companies, and other restrictive policies to maintain control over foreign enterpreneurs.

The Gradual Dependence of Europe on Oil

Before WWII and during the early post-war period, European countries relied heavily on coal as the main source of energy. WWII initiated a gradual change in the consumption of coal as countries changed to a cheaper source of energy--oil. European countries used various policies to try to save their coal industries in order to avoid dependence on foreign oil, but were not successful. After 1955, oil became the primary source of energy for the European nations.

The European countries that failed to remain independent of oil--foreign oil--resorted to other means to minimize their dependency. These means ranged from import quotas, exchange restrictions, price regulations, taxation, restrictions on the repatriation of the profits of the multinational oil companies to compulsory participation by foreign companies in national cartels.

Less Developed Countries' Responses to MNCs

It has been shown that the reaction of less developed countries to multinational oil companies has generally been harsh and has ranged from take-over of foreign companies and restrictive regulations to nationalization of the property of foreign oil companies. Among developing countries, the response of oil exporting countries to multinational companies has varied from the nationalization of the oil industry by individual countries to the more effective collective policies applied by the Organization of Oil Exporting Countries (OPEC).

Theories of Foreign Direct Investment

The study discussed the theoretical background of the motivations for foreign direct investment and the advantages and disadvantages of foreign direct investment to the economy of the home and host nations. It also evaluated the efficiency of foreign direct investment under different trade barriers from a Pareto optimality point of view.

A Micro-Economic Approach to the Theories of Foreign Direct Investment

Micro-economic theories on the theory of foreign direct investment included the following: 1) the "Business Administration Approach" which claims that the natural growth of the firm is a major cause of foreign direct investment; 2) the "Industrial Organization Approach" which assumes that the oligopolistic nature of the firm is the prime motive for foreign direct investment. This approach emphasizes the "giantism" and "performance" of the multinational corporations; 3) the "Product Cycle Approach" which relies on the three-stage theory of innovation, growth, and maturing of the new product and of R&D. It will be remembered that this approach hypothesizes that economic externalities initiate the growth of the firm, which leads to flow of direct investment abroad.

A Macro-Economic Approach to the Problem of Foreign Direct Investment

The macro-economic theories on foreign direct investment that were discussed in this study relied on an expanded version of the Hecksher-Ohlin trade theorem. The Mundell substitutability theorem provided evidence on the substitutability of factors (capital) for

commodities in a free trade condition, and Nadel proved that this substitutability is possible even under taxes and tariffs. The MacDougall-Kemp Model claimed that capital mobility between countries results in: 1) equalization of the marginal productivity of capital internationally; 2) improvement in the use of world resources; 3) an increase in world output; and 4) a higher level of social welfare for all individual countries involved in trade.

Using the macro-economic approach to the problem of foreign direct investment, this study developed a mathematical model indicating the welfare effect of international capital movement in the presence of unemployment. This model concludes that under certain conditions: transfer of capital intensive technology to a less developed country has a negative effect on its total employment; change in the real income of the host country as a result of inflow of capital depends on the trading position of that country with the home country and change in terms of trade; repatriation of earnings on imported capital and a positive change in the rate of return on imported capital lead to deterioration of social welfare of the host country; favorable change in prices and the amount of commodities exported to the host countries improve the real income of the home country; and an increase in the amount of investment and the rate of return on investment abroad result in improvement of the real income of the home country.

The main contribution of Batra and Ramachandran's model to the theory of foreign direct investment is the addition of the role of the "specific factor" to the expanded Hecksher-Ohlin theorem. This model, under the condition of profit maximization and optimum allocation of

resources, has given us the following conclusions: 1) an increase in corporate income tax results in a decline in the amount of employment of labor by MNCs in the host country, a reduction in the level of foreign direct investment in the host country, a reduction in purchasing power of the host country, a loss in the rate of return on capital in the home and the host country, and a rise in the national income of the host nation (up to a certain point); 2) a rise in the tariff rate imposed by the host country produces an increase in the amount of unemployment of labor by the MNCs in the host nations, a rise in the transfer of capital from the investing country to the host nation, an increase in the real wage of the host country, and a decline in the cost of capital in the host country.

Batra's model presents the main differences in the transfer of capital to developed and developing countries. The main feature of his model is still the role of the specific factor. The main conclusions of the model include: 1) operation of MNCs in an underdeveloped country results in transfer of capital from local industries to the foreign sector; 2) if the MNCs rely on capital intensive technology, the total unemployment in the host country goes up; 3) MNCs generate a reduction in the real income of the developing host nations; and 4) an increase in the tax rate by the host country on non-wage income generates a rise in the employment of capital and labor in the local sector.

The imposition of tariffs by the host country may reduce or even eliminate imports, but may not guarantee the expansion of domestic industries. Therefore, if host nations aim to protect infant industries they may resort to restrictive policies other than tariffs.

Statistical Analysis of the Determinants of U.S. Foreign Direct Investment in the European Economic Community

The empirical part of this study was presented in four sections: section one provided the development of a statistical model for estimating the factors that affect the flow of direct foreign investment, which was based on the neoclassical theory of profit maximization behavior and cost of adjustment. Section two discussed the problems and limitations on sources of data used in the estimation of the statistical model. The data series is limited to the 1950-1979 period on a yearly basis. In this section problems such as the accuracy of reported data, the difficulty in collection and disaggregation of data were also explained. Section three contained the empirical results of the estimation of equations related to the U.S. foreign direct investment in the petroleum industry in the EEC(6); the structural change in the trend of U.S. foreign direct investment in the petroleum industry in the EEC(6); the imposition of voluntary and mandatory control programs; and a comparison of the statistical results of the petroleum industry with the results for the manufacturing industry and "all industries." The results of the estimation of the statistical model can be summarized as follows: 1) U.S. direct investment in the petroleum industry in the EEC(6) depended on the level of output produced by the affiliates of the U.S. companies in the EEC(6), the U.S. interest rate, retained earnings by the affiliates of the U.S. companies, and the size of the host market. 2) Among many variables tested in this model, tariff discrimination, wage differential and the growth of the host market were found to be important in determining the amount of U.S. foreign direct investment

in the petroleum industry in the EEC(6). Although policy variables such as the formation of the European Economic Community, voluntary and mandatory control programs, and the growth of the home market turned out to be statistically insignificant, the t-statistics related to the estimation of these variables indicated that they add to the explanatory power of the overall equations. 3) Mandatory control programs had more effect than voluntary control programs on restraining the flow of U.S. direct investment to the EEC. 4) A change in the size of the host market affected U.S. foreign direct investment with the lag structure. This effect may be distributed over several time periods. 5) A similar test (with only a simple linear regression technique) on the manufacturing and "all industries" indicated the importance of variables such as total output produced by the affiliates of the U.S. companies in the EEC, the U.S. interest rate, the retained earnings by the affiliates of U.S. companies in the EEC and the size of the host nations in determining the amount of U.S. direct investment in manufacturing and all industries in the EEC.

It can be concluded, however, that more extensive research would be required to estimate additional socio-economic and political factors which affect the flow of direct investment in manufacturing and all industries and which this study did not investigate.

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