THE IMPACT OF LONG-RUN PRIVATE FOREIGN INVESTMENT ON THE U. S. BALANCE OF PAYMENTS, 1950-1962

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CHAPTER I

INTRODUCTION

The Setting of the Thesis

The United States balance of payments deficits during the past thirteen years which have culminated in recent years in substantial gold outflows have raised serious questions about the desirability of public policy which favors private foreign investment except in areas of the world where some special foreign policy interest may be served.[1] This concern for the chronic payments deficit was indicated in President Kennedy's balance of payments message of July 18, 1963,[2] in which he announced a series of coordinated actions to reinforce the administration's program to correct the payments deficit, including a request for an interest equalization tax.

Although the interest equalization tax applied only to long-term portfolio investment in developed countries and not to long-term direct private investment or long-term portfolio investment in underdeveloped countries, it does point out the increasing importance of the impact of private foreign investment on the payments deficit. The balance of

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[1] Raymond F. Mikesell, "Introduction," U. S. Private and Government Investment Abroad, ed. Raymond F. Mikesell (Eugene, Oregon, 1962), p. 5.

[2] U. S. House of Representatives, Hearings Before the Committee on Banking and Currency, 88th Congress, First Session (Washington, 1963), pp. 8-9.

TABLE I

RELATION BETWEEN BASIC AND TOTAL NET BALANCES OF U. S. INTERNATIONAL PAYMENTS, 1950-1962
(Billions of Dollars)

Year	Basic Balance				Short-Term Capital, etc.[e]	Total Balance[d]
	Net Goods and Services[a]	Long-Term Capital and Aid				
		Private Net[b]	Government, Net[c]	Total[d]		
1950	1.3	-1.0	-3.7	-3.4	-.1	-3.6
1951	3.3	-.7	-3.3	-.7	.4	-.3
1952	1.8	-.9	-2.5	-1.6	.6	-1.0
1953	-.1	-.3	-2.2	-2.6	.5	-2.2
1954	1.3	-.7	-1.7	-1.1	-.5	-1.6
1955	1.6	-.7	-2.4	-1.5	.3	-1.1
1956	3.4	-2.0	-2.5	-1.0	.1	-.9
1957	5.2	-2.9	-2.7	-.4	1.0	.5
1958	1.7	-2.6	-2.8[f]	-3.7[f]	.1[f]	-3.5
1959	-.4	-1.6	-2.6[f]	-4.7[f]	.9[f]	-3.7
1960	3.3	-2.1	-3.0[f]	-1.8[f]	-2.0[f]	-3.9
1961	5.0	-2.1	-3.7[f]	-.9[f]	-1.5[f]	-2.4
1962	4.3	-2.5	-3.9	-2.1	-.1	-2.2

[a] Includes net outflows of private remittances. Beginning in 1960, these net outflows include inflows for indemnification payments, which are not included in figures for 1959 and earlier years. See Survey of Current Business, Vol. 43 (June 1963), p. 26. Excludes exports financed by military grants.

[b] Consists of flows of U. S. private long-term capital and foreign long-term capital other than transactions in U. S. government securities.

[c] Includes changes in government holdings of foreign currencies other than holdings of convertible currencies by monetary authorities for stabilization purposes. Also includes pensions and other unilateral transfers. Excludes payments of $2,745 million in 1947 to the International Monetary Fund for original U. S. subscription and of $1,375 million in 1959 for an increase in the U. S. subscription. Excludes military grants.

[d] Totals in this column may differ from sum of components because figures are rounded.

[e] In addition to the flow of U. S. private short-term capital, this item includes prepayments of U. S. government loans, the flow of foreign capital in the form of commercial credits, and net errors and omissions.

Changes in the item "net errors and omissions" are believed to represent largely unrecorded flows of short-term capital.

[f]Receipts from prepayments of foreign debts to the U. S. government, amounting to $435 million in 1959, $48 million in 1960, $668 million in 1961, and $666 million in 1962, are excluded from government receipts of long-term capital and from the basic balance. Also excluded are receipts from increases in nonliquid short-term liabilities of the U. S. government amounting to $26 million in 1960, $85 million in 1961, and $865 million in 1962. These receipts have been added to the figures in the short-term capital column in those years.

Sources: Data for 1947-59 from Balance of Payments, statistical supplement to Survey of Current Business (1963). Data for 1960 through 1962 from Survey of Current Business, Vol. 43 (June 1963).

payments situation for the U. S. from 1950 through 1962 is shown in Table I entitled, "Relation between Basic and Total Net Balances of U. S. International Payments, 1950-1962."[3] During this period, the U. S. has enjoyed an export surplus of goods and services in all years except 1953 and 1959, but the net outflow of private and government long-term capital and aid have more than offset this export surplus as is shown in the table in the column entitled "Basic Balance Total." When short-term capital movements are included, the net result is a deficit in the total net balance of payments for the U. S. in each year except 1957 when a modest surplus occurred.

The increasing awareness of the impact of private foreign investment on the payments deficit has resulted in recent conflicting views regarding the desirability of encouraging private foreign investment. A few quotations from informed sources should suffice to verify this point. Secretary of the Treasury Dillon pointed out that:

> All the efforts that the government has made to improve the current account /of the balance of payments/ have been increasingly offset by a growing flood of portfolio investments which is a relatively new phenomenon....Something had to be done about this rising tide of portfolio investments, sales of bonds in particular.[4]

A view similar to Secretary Dillon's was expressed by Benjamin Graham, a well-known financial analyst, in an article in the Financial Analysts Journal when he wrote, "This brings us to our thesis: The loss of liquidity by the United States since 1957 can be traced directly and

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[3]Walter S. Salant, et al., The United States Balance of Payments in 1968 (Washington, 1964), p. 6.

[4]U. S. House of Representatives, pp. 98-99.

exclusively to the increase in the annual rate of our net foreign investments."[5] He also quotes a delegate to the world banker's convention in 1962 as saying, "The United States has not been living beyond its international means, but it has been investing beyond its international means."[6]

The Brookings Institution adopts a more middle of the road attitude toward private foreign investment and its impact on the balance of payments deficit by pointing out that an item by item examination of the balance of payments deficit:

> ...would suggest that the cause of the deterioration /of the balance of payments position of the U. S./ was the increase in the average annual outflow of private U. S. capital, but such an interpretation would not necessarily be correct. The increase in this outflow may have had little effect on the basic balance because, had it not occurred, exports might have been lower by nearly as much.[7]

The idea that private foreign investment could have a beneficial effect on the balance of payments was furthered by Raymond Mikesell when he pointed out that:

> Although the U. S. deficit in the balance of payments can be accounted for by a number of factors, including long-term investments, U. S. government grants, and large military expenditures abroad, the deterioration in our international reserve position has been more than compensated for by the rise in income earning investments abroad, both on government and private account.[8]

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[5]Benjamin Graham, "The Case Against Foreign Investment," Changing Patterns in Foreign Trade and Payments, ed. Bela Balassa (New York, 1964), p. 46.

[6]Ibid., p. 47.

[7]Salant, et al., p. 16.

[8]Mikesell, "U. S. Postwar Investments Abroad: A Statistical Analysis," ed. Mikesell, p. 46.

The sentiment expressed by Mikesell was even more emphatically stated by Elliott Haynes, Editor of Business International when he wrote:

> The sudden outflow of gold from the United States in the latter half of 1960 panicked a good many Americans and American institutions of stature and influence. As a result there were highly dangerous, ill-informed attacks on the very business practice that can help solve our balance of payments problem in the short run and strengthen our position in the world economy over the long pull. I refer to direct private foreign investments by U. S. manufacturing companies. ...The meaning to the U. S. balance of payments is clear. If we wish to remain a viable nation, we must help, not hinder, our manufacturers to become world corporations. Against this background, proposals to restrict investment in Europe represent a threat to the national interest.[9]

More recently, President Johnson announced proposed meetings both with bankers and businessmen to try to elicit their voluntary support in limiting overseas loans, bank deposits, and direct investments in foreign subsidiaries and affiliates.[10]

In light of the few references above, it is evident that there is some difference of opinion regarding the beneficial effects of private foreign investment on the United States balance of payments. For this reason, it would seem that there is a definite need for a study to be made to determine the relationships which existed between private foreign investment and the United States balance of payments.

Definition of the Problem

This study is concerned with the following question: "Is long-term private foreign investment detrimental to the U. S. balance of

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[9]Elliot Haynes, "Are Overseas Investments a Drain?" ed. Balassa, pp. 56-62.

[10]The Christian Science Monitor, February 12, 1965, p. 3.

payments in the long-run?" The problem area is restricted to the long-term private aspects of the relationship of foreign investment to the U. S. balance of payments. The reasons for these limitations are discussed below.

Private long-term foreign investment. Private long-term foreign investment, subsequently referred to as foreign investment, is divided into private long-term direct foreign investment, subsequently referred to as direct foreign investment, and private long-term portfolio foreign investment, subsequently referred to as portfolio foreign investment. These types of foreign investment are defined as follows: (1) direct foreign investment is a capital movement which results in increases in U. S. equity in foreign incorporated companies in the management of which U. S. investors have an important voice and the direct branches abroad of U. S. companies and (2) portfolio foreign investment is regarded as U. S. purchases of stocks, bonds, real estate, etc., which do not constitute an important voice in the management of an enterprise, but are held primarily as a source of income.[11]

The reason for limiting this study to private foreign investment and excluding government foreign investment and aid is indicated by the attack on private foreign investment as a cause of the deficit in the U. S. balance of payments. Discretionary action by U. S. businessmen and investors to take advantage of profit opportunities in foreign countries reflects the normal operation of the market mechanism for the

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[11] U. S. Department of Commerce, The Balance of Payments of the United States, 1949-1951 (Washington, 1952), pp. 93-94.

allocation of resources in the international economy. Government foreign investment and aid, on the other hand, usually are the result of foreign policy decisions and international treaty arrangements which take the form of economic and military aid expenditures in foreign countries. As long as economic considerations represent only one aspect of such policy decisions, there is little opportunity for strict economic analysis.[12] Concomitantly, some loans, such as those which are repayable in foreign currencies which cannot be used for the purchase of goods and services needed by the U. S. from the foreign country, must be regarded as outside the area of any reasonable definition of foreign investment. This thesis, therefore, is concerned only with private foreign investment.

A further delimination of the thesis is the exclusion of short-term capital movements. These capital movements respond to considerations which differ in substance from those governing long-term capital movements. Short-term capital movements are more likely to be the result of disturbances in the balance of payments while long-term capital movements are often thought to be the cause of balance of payments disturbances. Thus, short-term capital movements are not germane to the problem as stated above.[13] There is a fundamental difference, for example, between capital flows which result from a differential in the rate-of-return on investments which may exist between two countries and the case where a disturbance in the current account of the balance of

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[12]Wilfried Guth, Capital Exports to Less Developed Countries (Dordrecht, Holland, 1963), p. 2.

[13]Carl Iversen, Aspects of the Theory of International Capital Movements (Copenhagen, 1936), p. 30.

payments or short-term interest rate differentials call forth transitory flows of capital between countries.

It must be kept in mind, however, that even if capital movements are separated into long-and-short-term movements, there are some speculative elements in the short-term which affect long-term capital movements, e.g., commercial credits which are not of a speculative nature but merely the result of international trade.

Long-term private U. S. balance of payments.[14] For the purpose of this thesis, the concept of the long-term private U. S. balance of payments, subsequently referred to as the U. S. balance of payments, is used. Those balance of payments accounts which reflected government and short-term transactions were excluded from the data used in the analysis for the reasons outlined in the previous section, i.e., government sponsored exports and imports are usually not explained by economic theory and short-term transactions are often the effect rather than the cause of international developments.

In order to construct a private long-term balance of payments for the U. S., only the net figures for the following accounts were used: (1) merchandise, adjusted, excluding government and military, (2) transportation, (3) travel, (4) miscellaneous services, private, (5) income on investments, direct and other /portfolio/, (6) direct investments,

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[14] For an extensive discussion of the concepts of the balance of payments, see, Walter S. Salent, et al., The United States Balance of Payments in 1968 (Washington, 1964); Walther Lederer, The Balance on Foreign Transactions: Problems of Definition and Measurement (Princeton, 1963); James Edward Meade, The Balance of Payments (New York, 1951); Fritz Machlup, "Three Concepts of the Balance of Payments and the So-Called Dollar Shortage," The Economic Journal (March, 1950).

and (7) portfolio investments /comprised of the net of new issues of foreign securities, redemptions, and other long term/. Although this concept of the U. S. balance of payments is not completely free from governmental and short-term influences in a pure sense nor does it include all of the long-term items, it is as close as possible to expressing the private current and long-term U. S. balance of payments.

The long-run. For the purpose of this thesis, the term "long-run" refers to the time period to be covered by the analysis. It is difficult to select or even to envision a period of time in the recent history of the U. S. which can be considered as being "normal" in the sense that there are not atypical phenomena present to influence the performance of the variables in the study. Prior to the Second World War, the depression of the 1930's resulted in a general distrust in foreign investments by U. S. investors and the volume of foreign trade had been greatly reduced by the restrictive policies of many countries. With the advent of the Second World War, foreign investment and trade would definitely not represent the typical situation for the U. S. Immediately following the Second World War, the problem of reconstructing the destroyed industrial capacity of Western Europe and Japan and the large foreign aid expenditures of the U. S. accompanied by large flows of exports of capital and consumer's goods again resulted in an atypical relationship between foreign investment and the balance of payments.

The period from 1950 through 1962, however, represents a time in which the world economy was again returning to a situation where much of the destroyed industrial capacity of the world was rebuilt, the large Marshall Plan expenditures were ending, and businessmen began responding

to economic motives relative to foreign investment, albeit the presence of exchange restrictions probably still had a stifling effect on the level of foreign investment and trade. Although the political situation in the world was still unstable due to the threat of nuclear destruction, communism, and rising nationalism, private investors seemed to be gaining confidence in the international economic situation and the volume of private foreign investment increased (Table I). It was also assumed that this thirteen year period was ample time for any long-term trends and relationships between U. S. foreign investment and the U. S. balance of payments to be manifested.

Data limitations. Due to the nature of the thesis, i.e., a macroeconomic analysis, it was necessary to rely entirely on data published by government institutions and secondary source information taken from previously published studies in the same problem area. As it is true with most published data, there is the problem of error and bias being incorporated in the compilation process since much of the data is obtained by way of surveys and statistical estimation techniques. Error enters the data which are obtained from sample surveys since not all of the statistical universe being measured is included in the sample. Thus, it is probably a rare occasion when an estimate from a sample equals the value of the population parameter. Bias enters the data due to the conscious or unconscious bias or prejudice of the individuals who collect and classify the data. Although in most cases these surveys and estimation techniques do not yield exact totals, it is felt that for analysis purposes, especially on the macroeconomic level, the data are sufficiently accurate. Prior knowledge of the presence of error and bias in data serves to mitigate this problem.

An example of data limitation can be shown in the case of portfolio investment figures. Apparent inflows of portfolio investment from Europe to the United States and outflows of portfolio investment from the United States to Canada may actually be European purchases of Canadian securities through the New York market.[15] However, inaccurate or possibly misleading the data are, it still remains that these sources are the only ones available for the analysis.

The problem of reporting dates poses another data limitation. If an investment is made at the end of one reporting period, for example, the immediate effects of the investment would probably show up in the next reporting period. On the other hand, if the investment was made at the beginning of the reporting period, it is possible that the immediate effects of the investment would appear in the same reporting period. These problems make any lead-lag analysis very difficult. The typical rationale in most empirical studies, and no less in this study, is to assume that data errors and reporting errors will be normally distributed and in the long-run they tend to have zero or negligible influence on the results of the analysis.

The problem of empirical analysis in economic analysis. In economic studies, it is often found that the large number of cooperating and conflicting variables at work often prevent the possibility of arriving at any definitive and reliable conclusions since the variation of many of these variables cannot be controlled as a laboratory experiment. Faced with this problem, the economist can only limit the coverage

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[15] Salant, et al., p. 120.

of the study if the study is to be manageable and meaningful and at the same time provide an enumeration of the variables at work outside the limits of the study which are of an important influence.

In his study of international capital movements, Iversen recognized the difficulty of economic analysis applied to capital movements when he wrote:

> The essential difficulty is that the readjustment to foreign investment does not take place with equal ease and speed in all directions; some effects come about quickly, others slowly, some last long, others are short-lived; at any given instant a variety of cooperating or counteracting tendencies and forces will be at work, the relative strength of which may vary from moment to moment. . . . In real life we always live in a period of transition.[16]

With this general caveat given, the following section provides an outline of the study.

Methodology

The purpose of this thesis is to answer the question stated earlier in the chapter, "Is foreign investment detrimental to the U. S. balance of payments in the long-run?" In order to answer this question, it is necessary to use two tools of economic inquiry: economic theory and statistical analysis. Economic theory is used to develop the analytical framework for measuring the relationship between a country's foreign investment and its balance of payments. Statistical analysis is used to measure the empirical relationship between the level of U. S. foreign investment and the U. S. balance of payments during the period of the study.

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[16] Iversen, p. 12.

If economic theory indicates that foreign investment is beneficial to a country's balance of payments and statistical analysis indicates a positive relationship between U. S. foreign investment and the U. S. balance of payments, it will be assumed that U. S. foreign investment is beneficial to the U. S. balance of payments. On the other hand, if the statistical analysis indicates a negative relationship between U. S. foreign investment and the U. S. balance of payments, it will be assumed that U. S. foreign investment is detrimental to the U. S. balance of payments. Finally, if statistical analysis indicates that there is no definite positive or negative relationship between U. S. foreign investment and the U. S. balance of payments, the study will be assumed to be inconclusive.

The remainder of the study will follow the general outline of: (1) reviewing the determinants of foreign investment, (2) reviewing the theory of foreign investment, (3) developing statistical analysis techniques for examining the theory of foreign investment as it relates to U. S. foreign investment and the U. S. balance of payments, (4) making the analysis, and (5) summarizing the analysis and stating the conclusions.

CHAPTER II

THE DETERMINANTS OF FOREIGN INVESTMENT

Introduction

In a free enterprise economic system it is generally agreed that there exists a large measure of individual freedom over a wide range of economic choices. Within a broad matrix of legal, social, and cultural sanctions, individual resource owners are free to place their resources in employment wherever employment may be found and for whatever reason.[1] Private investment flows from one country to another are the manifestation of this individual prerogative on the international scene. The purpose of this chapter is to inquire into the determinants of foreign investment for the purpose of developing a better understanding of the relationship between a country's foreign investment and its balance of payments.

Determinants of Foreign Investment

During the century that followed the end of the Napoleonic wars until the end of the First World War, foreign investment played an important role in the development of the international economy. The characteristics of the international economy of this one hundred year period were said to have approximated the economist's norm of factor mobility and international specialization based on the doctrine of

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[1] Richard H. Leftwich, The Price System and Resource Allocation (New York, 1958), p. 1.

comparative advantage.[2] Under the circumstances, it is easy to see why economic theory suggested that the primary motive for foreign investment was the interest rate differential which existed among the various countries of the international economy.[3]

Following the breakdown of the international economic system which occurred after the First World War and the unsettled international political situation which has existed since the end of the Second World War, the "ideal" economic conditions of the 19th century have disappeared and in their place exists a much more complex environment for foreign investment. Although the economic motive of interest rate differential is still important to an explanation of foreign investment, recent studies discussed later in this chapter have shown that the motives listed by American businessmen for foreign investment are far more complex and usually indicate that a multicausal relationship exists.

In order to further examine the motives for foreign investment, it is necessary to consider foreign investment under two sub-divisions: (1) direct foreign investment, and (2) portfolio foreign investment. The distinction between direct and portfolio foreign investment is useful since each type of investment proceeds from different motivations,

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[2]Douglas C. North, "International Capital Movements In Historical Perspective," U. S. Private and Government Investment Abroad, ed. Raymond F. Mikesell (Eugene, Oregon, 1962), pp. 10-12.

[3]For an extensive discussion of this point, see, for example: Walter Krause, Economic Development (San Francisco, 1961), pp. 302-304; Ragnar Nurkse, "Causes and Effects of Capital Movements," Equilibrium and Growth in the World Economy, ed. Gotttried Haberler and Robert M. Stern (Cambridge, 1961), p. 3; Ray B. Westerfield, Money, Credit and Banking (New York, 1938), pp. 523-524; Carl Iversen, Aspects of the Theory of International Capital Movements (Leven and Munksgaard, Copenhagen, 1936), p. 127.

involves different investing groups, and has greatly different characteristics with respect to immediate economic effects on the host country, rates-of-return on investment, flexibility of income payments, amortization of investment, and relationship to U. S. exports and imports. The investment determinants for these two forms of foreign investment are discussed below.

Direct Foreign Investment. In the post World War II era, direct foreign investment has become a very important medium for the transfer of resources, techniques of production and marketing, and skills from one country to another. Foreign investment seems to be having an enormous impact upon the nature of international business and is playing a major role in quickening the pace of economic growth in the less-developed countries of the world.[4]

A recent survey by Robinson indicated that the determinants of direct foreign investment were much more complex than the often stated "interest rate differential," although the principle of the differential return-on-investment underlies many of the alternative determinants mentioned.[5] Part of the results of this survey is presented in Table II entitled, "Determinants Other than Government Policies Which Influenced the Selection of a Foreign Country for Investment."[6] Although the determinant mentioned most often as the factor which influenced the selection of a country for foreign investment was "Anticipation of relatively higher profits," it was followed by several other factors, the most

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[4]Raymond F. Mikesell, "Introduction," U. S. Private and Government Investment Abroad, ed. Raymond F. Mikesell (Eugene, Oregon, 1962), p. 3.

[5]Harry J. Robinson, The Motivation and Flow of Private Foreign Investment (Menlo Park, California, 1961).

[6]Robinson, p. 25.

TABLE II

DETERMINANTS OTHER THAN GOVERNMENT POLICIES WHICH INFLUENCED THE SELECTION OF A FOREIGN COUNTRY FOR INVESTMENT
(Number of Mentions)

Determinants	Africa	Europe	Latin America	Middle East, Asia, and Oceania	Total
Anticipation of relatively higher profits	10	57	83	32	182
Penetration into a new foreign market	11	68	63	26	168
Maintain sales in the face of tariff barriers or exchange restrictions	4	44	55	27	130
To match or forestall a competitor's move	11	30	60	29	130
Export base for neighboring markets	5	62	25	12	104
To develop a new industry in the country	7	19	44	24	94
Availability of skilled labor	4	55	21	14	94
Lower labor costs	4	40	25	10	79
Banking facilities	5	35	14	12	66
Availability of managerial personnel	1	37	13	9	60
Availability of unskilled labor	4	17	21	13	55
Road, rail, and harbor facilities	5	18	22	8	53
Ancillary or supporting industries	2	20	12	5	39
Power facilities	2	16	9	6	33
Offshore manufacture for export to parent company	3	7	1	4	15
Housing, recreation, and shopping facilities	--	6	3	6	15
Health and sanitation facilities	1	7	2	4	14
Storage facilities	1	6	2	2	11
Not a consideration	2	2	--	2	6
No answer	1	3	11	2	17

important of which are, in the order of importance, "Penetration into a new foreign market," "Maintain sales in the face of tariff barriers or exchange restrictions," and "To match or forestall a competitor's move." Although there is some overlapping of the factors listed in the table, it does point up the multiplicity of the decision parameters used in direct foreign investment decisions.

In testimony before the House Committee on Banking and Currency, Secretary of the Treasury Dillon expressed the view that U. S. businessmen invested abroad for the purpose of: (1) preserving and expanding the markets of the domestic company, (2) for higher profits, (3) to take advantage of lower corporation taxes, and (4) the fact that profits earned abroad are only subject to U. S. tax rates when they are brought back to the U. S.[7] The Brookings Institution has added to the list of determinants for investing abroad by naming reasons such as: (1) to develop natural resources, (2) to take advantage of lower costs of production, (3) foreign sites reduce transportation costs, (4) ability to avoid paying tariffs or to overcome trade restrictions, and (5) to gain better consumer acceptance of the product by manufacturing locally.[8]

An interesting aspect of why U. S. businessmen invest abroad comes from the fact that competition from other U. S. corporations or from foreign corporations has forced some companies to invest abroad and the presence of lower costs, in many instances, increases this competition. It must not be presumed, however, that low labor costs are a sufficient

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[7]U. S. House of Representatives, Hearings before the Committee on Banking and Currency, 88th Congress, First Session (Washington, 1963), p. 110.

[8]Walter S. Salant, et al., The United States Balance of Payments in 1968 (Washington, 1964), p. 139.

inducement to invest abroad. Lower wage rates abroad may not be the prime determining factor since it is believed in some circles that given the same tools and production techniques, the pride of workmanship inherent in the foreign worker, in Germany for example, results in a high quality product and efficient operation of the production process.[9] In some countries, however, higher raw materials costs make up the difference between the efficiency of labor in the foreign country as compared to the U. S. and, in many underdeveloped countries, management as well as labor is relatively inefficient.[10]

It may be contended that most of the listed determinants for foreign investment will in one way or another result in higher profits and, thereby, higher rates-of-return on investments located abroad as compared to similar investments located domestically. However, analysis of the percentage returns on direct foreign investment for the period 1950-1962 shows that direct foreign investment income to U. S. investors as a percentage of the total reported book value of direct foreign investments has fluctuated between a high of 11.5 percent in 1951 and a low of 7.2 percent in 1960 and has been in the 7.0 percent to 8.0 percent range during the years 1957 to 1962. These figures are shown in more detail in Table III entitled, "Percentage Rates-Of-Return on Investment for U. S. Private Direct Investment in the World by Type of Investment, 1950-1962." These rates-of-return on investment are even more significant

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[9] J. N. Behrman, "Foreign Associates and Their Financing," U. S. Private and Government Investment Abroad, ed. Mikesell, p. 90.

[10] Behrman, p. 90.

when it was found by a survey made by Behrman of 56 companies with direct investment abroad that the majority of the companies reported that the current equity values of the companies were as much as 100 percent to 200 percent above the book values listed in the Department of Commerce publication on the values of U. S. foreign investment.[11] If current equity values rather than book value were used to compute the returns on investment shown in Table III, the rates would be much lower than indicated. With the exception of direct foreign investment in petroleum, average earnings as a percent of book value do not appear to be significantly higher in foreign countries than in the U. S.[12]

The above evidence seems to further substantiate the claim that market expansion rather than return-on-investment differentials is the main investment determinant for direct foreign investment. Knopp states, in effect, that it is plain that neither the interest rate differential nor the shifts in demand schedules theories have any application to foreign investment in the real world where capital movements have historically been associated with fluctuations in world income and employment. He points out that there are cases of capital movements, which are by far the most common kind, when foreign investment and foreign trade both responded to an underlying set of causes affecting them both, e.g., railroad building in the 19th century. In this case, both direct foreign investment and increased exports were but different aspects of a complex

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[11] Behrman, pp. 108-111. Of the 56 companies reporting, 17 companies reported equal current equity and book value, 19 companies reported current equity 50 percent higher than book value, 7 companies reported current equity to be 50 percent to 100 percent higher than book value, and 5 companies reported current equity to be over 200 percent higher than book value.

[12] Raymond F. Mikesell, "U. S. Postwar Investment Abroad: A Statistical Perspective," U. S. Private and Government Investment Abroad, ed. Mikesell, p. 65.

TABLE III

PERCENTAGE RATES-OF-RETURN ON INVESTMENT FOR U. S. PRIVATE DIRECT INVESTMENT IN THE WORLD BY TYPE OF INVESTMENT, 1950-1962

Year	Percentage Rates-of-Return on Investment[a]					
	All Industries	Mining and Smelting	Petroleum	Manufacturing	Trade	Other (Including Public Utilities)
1950	11.0	9.9	16.4	9.3	9.4	7.4
1951	11.5	12.3	18.9	7.6	9.0	8.1
1952	9.6	9.8	15.8	5.8	8.2	7.5
1953	8.9	5.3	15.5	5.9	7.5	6.2
1954	9.8	7.5	17.7	5.9	6.5	6.7
1955	9.9	8.9	17.4	5.8	6.9	6.5
1956	9.6	9.9	15.8	5.0	6.5	8.1
1957	8.9	8.9	14.1	5.4	6.1	5.4
1958	7.7	6.6	11.9	5.3	6.7	4.4
1959	7.5	8.7	10.7	5.7	6.3	4.1
1960	7.2	11.2	10.5	4.9	5.4	3.6
1961	7.7	9.7	10.7	5.9	NA	NA
1962	8.2	9.9	12.5	5.6	NA	NA

[a]Rates-of-return on investment were computed by dividing income earned on U. S. direct investments abroad, i.e., dividents, interest and branch profits, after foreign taxes but before any applicable U. S. taxes, by total asset book value of the direct investment.

Source: Data for 1950-1960 from Balance of Payments, statistical supplement to Survey of Current Business (1963). Data for 1961 is from Survey of Current Business, Vol. 42 (August, 1962) and for 1962 it is from the Survey of Current Business, Vol. 43 (August, 1963).

underlying situation giving rise to them both, viz., the conditions that made railroad building profitable, the need to export investment goods and equipment from the capital-rich to the capital-poor countries, and the lack of a capital market for long-term development in such places.[13] Thus, the determinant given the most weight as a means of increasing profits is a rapidly expanding foreign demand or a rapid increase in the potential size of the foreign market.

Portfolio foreign investment. The revival of portfolio foreign investment in areas outside of Canada has been one of the important developments in foreign investment in the postwar era. As is shown in Table IV entitled, "Total U. S. Private Long-Term Foreign Investment, 1950-1960," the volume of portfolio investment in foreign countries has increased almost three-fold from the early 1950's to the early 1960's, and it is possible that another decade of stability and prosperity in Western Europe could bring about a large scale international market in securities.[14] In the past few years, New York has once again become an international market for new long-term capital and New York investment bankers are actively trying to induce European accounts to obtain their portfolio capital in New York.[15]

Perhaps the determinant for foreign investment most applicable to portfolio foreign investment is the interest rate differential which is

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[13]John Knopp, "The Theory of International Capital Movements and its Verifications," The Review of Economic Studies (New York, 1959), pp. 117-119.

[14]Mikesell, "Introduction," p. 7.

[15]U. S. House of Representatives, p. 102.

TABLE IV

TOTAL U. S. PRIVATE LONG-TERM FOREIGN INVESTMENT, 1950-1962
(Millions of Dollars)

Year	Direct Investment	Portfolio Investment				Total Direct and Portfolio
		New Issues	Other Long-Term	Redemptions	Net Total	
1950	621	254	542	-301	495	1,116
1951	508	491	59	-113	437	945
1952	852	286	-6	-66	214	1,066
1953	735	270	-317	-138	-185	550
1954	667	309	135	-124	320	987
1955	823	128	303	-190	241	1,067
1956	1,951	453	324	-174	603	2,554
1957	2,442	597	441	-179	859	3,301
1958	1,181	955	574	-85	1,444	2,625
1959	1,372	624	397	-95	926	2,298
1960	1,694	573	377	-100	850	2,544
1961	1,475	510	619	-123	1,006	2,481
1962	1,557	1,076	303	-170	1,209	2,766

Source: Data for 1950-1961 from Balance of Payments statistical supplement to Survey of Current Business (1963). Data for 1962 from Survey of Current Business, Vol. 44 (March, 1964).

due in part to the continued underdeveloped state of capital markets in Europe and the relatively well developed state of the capital market in New York.[16] Such a situation allows U. S. investors to obtain foreign securities at a rate-of-return on investment which is higher than the "going rate" in New York and it allows European businessmen to secure money capital at a lower interest rate than the "going rate" in Europe. Thus, due to the fact that the supply of money capital relative to the demand for money capital in Europe is small, the cost of money capital in Europe has risen relative to the cost of money capital in New York, and out of this relationship emerges the classic determinant for capital movements from one country to another, i.e., the interest rate differential.[17]

A second and very closely related determinant of portfolio foreign investment was the existence of the specialized institutions of the foreign securities market in the U. S. These institutions provided the links between the U. S. and the foreign markets which made it almost as easy for domestic investors to trade in foreign securities issues as in U. S. securities issues. Not only were these well developed institutions of the foreign securities market used by U. S. investors, but foreign investors have also played a key role in the resurgence of foreign dollar bond flotations in New York through their purchase of a large share of the new offerings. During the period 1958 through 1959, it was estimated

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[16] Ibid., p. 103.

[17] For example see: Iversen, p. 127; Bertil Ohlin, Interregional and International Trade (Cambridge, 1933), p. 160.

that foreign investors took two-thirds or more of the publicly offered and underwritten foreign security issues in New York.[18]

A third important determinant of portfolio foreign investment is the re-emergence of prosperity in the industrial countries of the free world, especially in Western Europe. This development coupled with ten year's experience with World Bank bonds made investors more open to foreign debt and equity investment.[19] The Brookings Institution adds that, "The principal motivation for U. S. purchases of foreign bonds are the desire to profit from higher rates of return and the desire for regional diversification of assets. Part of the latter motive is the desire to hedge against exchange-rate devaluations."[20]

The determinants for investing in foreign equities are similar to those for investing in foreign bonds, plus the fact that investors are attracted by the possibility of greater capital gains from foreign issues than from domestic issues. The high growth rate in Western Europe and the rapid growth of a few large firms have made the possibility of capital gains very real.[21] There is one aspect of the purchase of foreign equities which is interesting in that the enthusiasm for foreign securities seems to be highest when U. S. stock prices are high or rising, but when the U. S. economic outlook becomes cloudy, foreign issues reportedly

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[18]Paul Meek, "United States Investment In Foreign Securities," U. S. Private and Government Investment Abroad, ed. Mikesell, pp. 251-261.

[19]Ibid., pp. 245-246.

[20]Salant, et al., p. 131.

[21]Ibid., p. 135.

tend to be among the first to be replaced in a general upgrading of institutional portfolios.[22]

Other determinants of foreign investment. There are several factors which influence the rate and direction of foreign investment which are related to the problem and whose effects on foreign investment are not easily measurable. A good example of these indirect factors is the influence exercised by the return to convertibility of Western European currencies in 1958. This allowed long-term capital flows a wider choice of countries where the prospects for profits were the greatest without having exchange control restrictions preclude the return flow of profits from the investments to firms in the investing countries. It also allowed short-term capital to flow to countries where the interest rates were relatively high, thereby augmenting the foreign exchange reserves of these countries.

Another important factor in influencing the flow of foreign investment was the advent of the Common Market with the elimination of internal trade restrictions and the erection of a common external tariff. The elimination of internal trade restrictions has allowed the development of increasing returns to scale which could call for additional investments in plant and equipment. Possible evidence of this need for additional investment being supplied is shown in Table IV with the large increase in direct investment and new issues of portfolio investment which occurred since 1956. The presence of tariff barriers has long been an influence

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[22]U. S. House of Representatives, p. 264.

on the rate and direction of foreign investment. Iversen made this point when he wrote:

> Capital movements due to protective tariffs often take the form of establishment of branch factories within the tariff wall. In such cases the fear of losing one's market in the protected country, or the prospect of reaping high profits sheltered by the tariff barrier, may be more powerful motives to capital export than differences in interest rates.[23]

Perhaps a final series of factors influencing the level of U. S. foreign investment are the result of the unsettled economic and political conditions which have existed since the early 1930's. It is possible that U. S. foreign investment has not taken place on a large scale from the early 1930's to the mid 1950's due to events such as the economic and monetary disturbances in the early 1930's, the growing political tensions and capital flight from Western Europe in the late 1930's, the Second World War, and the postwar years of shortages and controls. Also, since the mid 1950's, businessmen may have realized that with the supposed equalization of military power between the Eastern and Western Political Powers, there is little advantage, as far as security from military destruction is concerned, for investing in the U. S. rather than abroad. Thus, it is possible that U. S. companies have expanded their foreign investment since the mid 1950's to make up for the lack of investment over the past several decades.[24]

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[23] Iversen, p. 138.

[24] Hal B. Lary, Problems of the United States as World Trader and Banker (New York, 1963), p. 69.

Summary

The purpose of this chapter was to inquire into the determinants of direct and portfolio foreign investment. Although earlier theories of foreign investment emphasized the determinant of "interest rate differential," recent studies indicate that this determinant applies primarily to portfolio foreign investment. The same surveys indicated that the determinants for direct foreign investment included determinants such as the anticipation of higher profits, penetration into a new market, the maintenance of sales in the face of tariff barriers, and to match or forestall a competitor's move, to name a few of the most important. For portfolio foreign investment, next to the relatively high interest rate paid on foreign securities, other determinants were listed such as the more stable political and economic conditions in Western Europe in recent years and the availability of portfolio funds on a large scale in the New York money market.

CHAPTER III

THE THEORY OF FOREIGN INVESTMENT

Introduction

The discussion in the previous chapter served to point up some of the determinants of foreign investment as reported by business firms who have actually made investments abroad. The purpose of this chapter is to inquire into the theoretical aspects of foreign investment in order to ascertain what economic theory indicates to be the cause and effect of foreign investment on the investing country and the country in which the investment is made. Such a theoretical exposition will serve as the analytical framework for measuring the relationship between a country's foreign investment and its balance of payments.

The following discussion presents a theoretical exposition of the movement of capital, i.e., direct and portfolio foreign investment, from one country, subsequently referred to as the investing country, to one or more foreign countries, subsequently referred to as the host country or countries. The chapter will follow the general outline of: (1) reviewing the traditional theory of the process of capital movements, (2) reviewing the allocation effect of capital movements on the investing and host countries' economies, (3) reviewing the national income effect of capital movements on the investing and host countries' economies, (4) reviewing the balance of payments effects on the investing and host countries' economies, and (5) summarizing the discussion.

Traditional Theory of Capital Movements

The initial assumptions necessary for a theoretical discussion are: (1) mobility of the factors of production in both the domestic and international economy, (2) flexible prices and interest rates, (3) stable exchange rates, and (4) less than full employment of the factors of production in the investing country.

The process of transferring real capital resources from an investing country to a host country produces a reaction in the economy of both countries which can best be explained in terms of general equilibrium economics on the international level. Due to the unequal distribution of resources in the world, the ratios of the combinations of the various productive resources will tend to be different in each use and in each country and there is an unequal distribution of the resources. At the same time such a situation induces the international movement of capital which can be shown by the following example. Assume that countries A and B have identical production functions but country A has a high labor/capital ratio and country B has a low labor/capital ratio which is due to different factor endowments. With such a combination of labor and capital in the two countries, at each level of production capital in country A will enjoy a higher marginal physical product of capital (MPP_c) than it will in country B. Thus, the differential MPP_c which exists between the two countries will induce a long-term movement of capital from the country with a low MPP_c, i.e., country B, to the country with the high MPP_c, i.e., country A. When the labor/capital ratio rises in in country B as more capital flows out and when the labor/capital ratio falls in country A as more capital flows in, the initial MPP_c differential

which existed between countries A and B is reduced and finally eliminated. At this point long-term capital flows will cease.

Accompanying the movement of capital from country B to country A, there should be a reverse flow of labor moving from A to B since the initially high labor/capital ratio in country A as compared to country B also means that at each level of production the marginal physical product of labor (MPP_L) in country A is lower than it is in country B. Thus, the differential MPP_L which exists between the two countries will induce a long-term movement of labor from the country with the lower MPP_L, i.e., country A, to the country with the higher MPP_L, i.e., country B. This movement of labor will continue until the MPP_L differential which existed between countries A and B is eliminated.[1] Such a situation existed during the 19th century when there was a direct relationship between the migration of labor and capital to the so-called "empty lands" of North America, Australia, and New Zealand. The reason for the migration of labor along with capital can be explained by the relatively higher marginal physical product of labor in these sparcely populated areas compared to the labor crowded conditions of Western Europe.[2]

The process of capital movements between countries involves two steps: (1) when the investing country assigns some of its purchasing power to the host country and (2) when the host country uses this assigned

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[1]Richard H. Leftwich, The Price System and Resource Allocation (New York, 1958), pp. 315-317.

[2]Douglass C. North, "International Capital Movements in Historical Perspective," U. S. Private and Government Investment Abroad, ed. Raymond F. Mikesell (Eugene, Oregon, 1962), p. 28.

purchasing power to purchase real goods and services. Thus, capital is always eventually transferred from one country to another in the form of real goods and services.[3] The host country imports goods and services and exports securities or a promise to pay with each investment. In order to more fully explore the above process of capital movements, consider the following two situations: (1) where the capital movement involves only two countries and (2) where the capital movement involves three or more countries.

The two country case. In this case the host country (A) acquires purchasing power from the investing country (B) and in return A promises to pay B in the future. Now A has deposits created for it in banks in B. If A uses the new deposits to purchase goods and services from B, this results in an increase in exports of real goods and services from B to A, and the capital movement has resulted in the transfer of real goods and services between the two countries.

However, if A uses the new deposit for purchases in its own country, the sequence is more complex. First assume less than full employment in A. The borrowers in A sell their new deposits in B to the banks in their country who pay the borrowers in their own currency. When the borrowers in A spend the new money, this generates a rise in employment and a concomitant rise in domestic incomes which, in turn, are spent on consumer goods and/or investment goods. The increase in income is likely to cause: (1) a rise in consumption and investment expenditures in A, part of which are probably purchases of goods imported from B, and/or (2) a

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[3]Carl Iversen, Aspects of the Theory of International Capital Movements (Copenhagen, 1936), p. 30.

larger fraction of the goods usually exported from A are purchased by domestic users, causing exports from A to fall or at least not to rise. Thus, the tendency of the expansion of investment in A by way of borrowing abroad from B results in a rise in income in A and causes a possible rise in imports by A which is not compensated by a rise in exports, i.e., a rise in the balance of payments deficit for A. The capital movement from B to A, although not spent directly on imports from B, has resulted in a transfer of real goods and services from B to A and the net result for B after a time lag is the same as if A had originally purchased the goods and services from B.

In the case of the same two countries but with full employment in A, the results are similar. The expenditure in A causes a rise in prices relative to the prices in B with the result that there would be a fall in exports from A, a rise in its imports, and a balance of payments deficit would be created or enlarged. Again, the net effect is a transfer of real goods and services from B to A as the result of the capital movement.

The three or more country case. The case involving three countries, which could be expanded to include more countries with the same general results, works in a slightly different manner than the two country case although the end result is the same. Assume that A uses its new bank balances held in banks in B to purchase goods from a third country (C). When the borrowers in A purchase goods from C, they are in effect selling their bank balances in B to banks in C and the transfer of real goods and services takes place between C and A when the goods are exported from C to A. The banks in B must be willing to reduce

their deposit liabilities, now held by the banks in C, through a reduction of their holdings of balances in C in order to pay the claims on their balances by C. Unless the banks in B are willing to allow their balances in C to be permanently reduced, they will take steps to restore their balances in C to their previous level. The steps to be taken would be to discourage imports from C and to stimulate exports to C which would work toward restoring the B banks' balances in C via a balance of payments surplus for B. This explanation of the three country case can be extended by assuming that the purchases by the borrowers in A of goods from suppliers in C stimulate employment and income in C tending to raise its imports and decrease its exports, in the case of the existence of less than full employment in C. In the case of full employment in C, however, the purchases by A would cause a rise in prices in C relative to B with the same effect on imports and exports. Thus, again the capital movement is followed by a transfer of real goods and services. In the three country case the transfer of real goods and services is from B to C to A although the time sequence was actually from C to A as one step and from B to C as another.

It is evident that these "pure" cases are extremes. In the real world there would likely be some combination of these extremes, with the complications of the borrowed funds being spend partly in third, fourth, and more countries. The net result, however, would be the same, a capital movement succeeded by a real transfer of goods and services, unless the host country for some reason wishes to hold idle balances in the lending country, at home, or in third countries, or if the monetary authorities in the borrowing country "sterilized" the new balances by

following a policy of monetary restraint.[4] If the new balances are sterilized and not allowed to become the basis for new domestic loans in the borrowing country, the transfer of real goods and services from the lending to the borrowing country could be delayed indefinitely.

The repercussions of real capital movement on the economies of the investing and the host countries will be discussed below.

Allocation Effect of Capital Movements

The discussion of the process of the capital movement in the previous section indicated that the capital movement sooner or later resulted in the transfer of real goods and services among the various countries involved. It is evident that due to the mutual interdependence of countries in the international economy an international transfer of purchasing power among countries is likely to affect both the direction of demand, i.e., the distribution of demand among different goods, and the localization of demand, i.e., the distribution of demand for goods among different countries. In other words, the transfer of purchasing power means that different goods will be demanded at different places in the world. The result of these changes means that since the factors of production are combined in different proportions to make different goods, the capital transfer will ultimately influence: (1) the methods, costs, and volume of production, (2) relative factor scarcity and their prices, (3) the terms of trade, and (4) the volume and composition of international trade.[5] The following is a discussion of these points.

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[4]Norman S. Buchanan, International Investment and Domestic Welfare (New York, 1945), pp. 232-236.

[5]Iversen, p. 452.

Effect on methods, costs, and volume of production. When investors invest in a foreign country, this often involves the sending of capital goods, management and technical personnel, and technology out of the investing country to the foreign country. The cost of transferring these resources abroad is the opportunity cost of the resources to the investing country. The opportunity cost of capital is the rate-of-return on a similar investment in the investing country; however, the foreign investment would probably never have taken place unless the investor had not discounted the estimated future returns from the transfer of resources to a present value at least equal to the accounting plus the opportunity costs of the resources transferred. The opportunity cost of management and technical personnel is the lost time of experienced personnel to the domestic firm. The opportunity cost of transferring technology, on the other hand, is not easy to determine since the investing country does not have to be deprived of a resource as the result of the transfer and, thus, can be considered as having a zero cost to the investing country.

For the host country, the transfer of resources is generally beneficial. When management and technical personnel are transferred abroad the host country not only receives the personnel, per se, but the transfer could result in the expert training of local personnel and the reorienting of domestic personnel toward new roles in enterprise and production. This is especially true in the case of underdeveloped countries. The transfer of capital is also very beneficial in that it raises the economic growth potential of the host country, it makes for the possible reinvesting of profits and reserves which result from the operation of the new production, and it mobilizes domestic capital which before was

unavailable to initiate the investment but which can now supplement the initial investment. The transfer of technology, however, is perhaps the most important by-product of foreign investment for the host country. Such a transfer gives the host country the results of past and present research without any expenditure plus the fact that some firms establish research facilities in foreign countries in order to use foreign personnel and ideas.[6]

The importation of capital, management and technical personnel, and technology should also produce both internal and external economies in the host country. Internal economies result from the rise in productivity resulting from the investment, thereby reducing costs, and the gradual spread of technology throughout the host country. External economies result from: (1) the rise in production related to the investment which induces a greater demand for social overhead capital, (2) the expansion in one sector of the economy tends to increase activity in other sectors, especially the supporting sectors, and (3) additional external economies result from the training and upgrading of host country personnel.[7]

All of the above mentioned changes will probably result in some change in the methods, costs, and volume of production in investing and host countries.

Relative factor scarcity and factor prices. The reallocation of resources from the investing to the host country will cause a rise in domestic factor payments in the investing country for two reasons:

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[6] J. N. Behrman, "Promotion of Private Overseas Investment," U. S. Private and Government Investment Abroad, ed. Mikesell, pp. 137-140.

[7] Ibid., pp. 148-150.

(1) the decrease in the supply of these factors in the domestic economy relative to demand and (2) the increase in the demand for these factors as exports of goods and services rise as a result of rising incomes in foreign countries stemming from the investment in these countries. Since real capital and management and technical personnel are the factors most needed abroad, their relative share of income in the domestic economy will rise and the relative share of income for labor and the other factors will fall. Labor could gain absolutely, however, due to the lower price of imported goods produced in greater volume by the new plants abroad, assuming that the investment is for productive capacity and results in increased competition from abroad. The consumer in the investing country should realize a rise in his real income as a result of the foreign investment if there is a net gain or maintenance of income receipts from foreign investment and if the increased competition from abroad results in lower prices to the consumer.[8]

The effect of resource reallocation on factor prices depends on whether or not the investing and host countries are at less than full employment. As real capital and management and technical personnel move out of the investing country, these factor prices should not rise in the investing country if there is less than full employment. However, if there is a relatively high level of employment in the investing country, the factor prices should rise. As capital, management and technical personnel, and technology move into a given host country there is additional demand for labor, materials, land, and domestic capital in

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[8] Ibid., pp. 160-161.

that country. This creates a flow of resources into the enterprises associated with the investment with no rise in factor payments if there is less than full employment or a shift of resources from lower paying employment to higher paying employment if there is full employment and this results in a rise in factor prices.[9] Thus, at full employment it is a decrease in the factor supply curve which would cause factor prices to rise in the investing country, while in the host country, it is the increase in the factor demand curve to a higher level which would cause a rise in factor prices.

If there are diminishing marginal returns to capital, capital will move from capital rich countries with relatively low MPP_c to capital poor countries with a relatively high MPP_c and this will continue until the MPP_c is equal in both countries, as was discussed above. Thus, increased foreign investment reduces the returns on all previously exported capital in the host country and increases the return on capital in the investing country. However, this action results in a larger combined level of income for the international economy than before the capital movement since the addition to total production in the host countries is greater than the reduction in total production in the investing countries, with either full or less than full employment in either country. As was pointed out in a previous section, capital movements affect the MPP of the other factors of production and, given free factor mobility, the international economy is assumed to move toward international general equilibrium where there are no shortages or surpluses and the MPP per dollar's worth of all goods and factors is equal.

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[9]Ibid., pp. 144-147.

The tendency of the unrestricted flow of factors and trade to equalize factor prices is discussed in detail by Ohlin, Meade, Hekscher, and Lerner and this trend of thought is further developed by Samuelson, McKenzie, and Uzowa.[10]

Thus, capital movements, transfers of management and technical personnel, and technology result in a change in the relative scarcity of the factors of production and their relative prices in both the investing and host countries.

Terms of trade. The relationship between capital movements and a country's terms of trade is one which involves a great deal of controversy.[11] The explanation of terms of trade given by Meade can be summarized as follows: terms of trade refer to the price which country

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[10]Bertil Ohlin, Interregional and International Trade (Harvard, 1935); James E. Meade, "The Theory of International Economic Policy," Trade and Welfare (New York, 1955); E. F. Hekscher, "The Effect of Foreign Trade on the Distribution of Income," Readings in the Theory of International Trade, ed. H. S. Ellis and L. A. Metzler (Philadelphia, 1949); A. P. Lerner, "Factor Prices and International Trade," Economics, Vol. XIX (1952), pp. 1-15; Paul A. Samuelson, "International Trade and the Equilization of Factor Prices," Economic Journal, Vol. LXIII (1948), pp. 163-184 and "International Factor-Price Equilization Once Again," Economic Journal, Vol. LIX (1949), pp. 181-197; and "Prices of Factors and Goods in General Equilibrium," Review of Economic Studies, Vol. 21 (1953-54); L. W. McKenzie, "Equality of Factor Prices in World Trade," Econometrica, Vol. 23 (1955), pp. 239-287; H. Uzowa, "Price of the Factors of Production in International Trade," Econometrica, Vol. 7 (July 1959).

[11]The effects of capital movements on the terms of trade are discussed by the following: Charles P. Kindleberger, The Terms of Trade: A European Case Study (New York, 1956), Chapter VI; Lloyd Metzler, "The Transfer Problem Reconsidered," Journal of Political Economy, Vol. L (1942), pp. 397-414; A. C. Pigou, "Unrequited Imports," Economic Journal, (June, 1950), pp. 241-254; Paul A. Samuelson, "The Terms of Trade Under Capital Transfer When Impediments to Transport are Absent," Economic Journal (June 1952), pp. 278-304; Charles R. Whitlesey, "Foreign Investment and the Terms of Trade," Quarterly Journal of Economics (May, 1932), pp. 444-464; an excellent summary may be found in: Gottfried Haberler, A Survey of International Trade Theory (Revised) (Princeton, 1961).

A has to pay in terms of its own products in order to obtain a given amount of country B's products. With the balance of payments between the two countries unchanged but with a reduction of country A's prices relative to prices in country B, producers in country A must export a greater volume of products to obtain the same value of imports while producers in country B can export a smaller volume of products to obtain the same import value. The residents in country A in this case are getting less of country B's products in exchange for each unit of their own output.[12]

Some writers believe that movements in the terms of trade which result from a shift in consumer's demand, and this is Nurkse's view for example, may be the cause and not the effect of the import of capital into the host country. On the other hand, the classical view is that an inflow of capital will shift the terms of trade to the capital importing country.[13] On the other hand, a prior capital inflow could cause the supply curve of the host country to shift to the right with the resultant fall in prices and terms of trade for the host country. "It seems clear that capital movements and the terms of trade are only part of a larger whole, and that generalizations about the two elements alone are not productive."[14] The overall effect on the terms of trade would seem to depend a great deal on the price elasticity of demand for the product in which the investment was made. If the price elasticity of demand

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[12] James Edward Meade, The Balance of Payments (New York, 1951), pp. 50-51.

[13] Iversen, p. 131.

[14] North, p. 29.

is less than one, there should be a relatively large fall in the price of the product when supply is increased as, for example, in the production of raw materials, and if the price elasticity of demand is more than one, there should be a relatively small fall in the price of the product when supply is increased as, for example, in the production of consumer durables goods.

Due to the mutual interdependence of the price systems of the various countries of the world, all countries will feel to a degree the effects of the changed relative scarcity of the productive factors and the changed relative prices of the goods and services which result from the transfer of capital. A given country could even experience an inflow or outflow of capital without any changes in its price system due to price changes abroad affecting the relative price structure of the country vis-à-vis the rest of the world.[15] As it was pointed out above, foreign investment serves to increase productive capacity with the result that the supply curve shifts to the right and prices fall in that particular sector of the host country's economy. If the host country sold on the world market at a lower price, it is possible that relative prices could stay the same since foreign competitors may reduce their prices to remain competitive in the short-run. However, in the long-run, there should be a definite change in relative prices if the foreign competitor's costs are not reduced and they cannot supply the world market indefinitely at the lower price.[16]

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[15] Iversen, p. 117.

[16] Walter S. Salant, et al., The United States Balance of Payments in 1968 (Washington, 1964), p. 20.

Thus, a capital movement which results in shifts in a country's supply curve would certainly result in a change in the relative price structure in the international economy thereby producing some change in the investing and host countries' terms of trade.

Volume and composition of international trade. It is obvious from the above discussion that there is a close relationship between the transfer of real resources and the volume of international trade, its composition and geographical distribution, and each country's terms of trade. It is impossible, however, to determine a priori whether or how much a transfer of real resources will affect these changes since these changes depend a great deal on the type of investment involved, e.g., raw material production, manufacturing, or social overhead capital, the income effect of the investment, and the effect on foreign and domestic demand. In other words, if the investment creates economies of large scale operation in export industries more than in industries which compete with imports, the result will be an increase in foreign trade. The volume of foreign trade depends not only on the investment but also on the distribution of income. Capital movements may alter the direction of demand through their influence on the internal distribution of incomes. If the demand for foreign goods becomes greater as the result of the rise in income due to the capital movement, foreign trade will increase, but if demand is shifted toward domestic goods, foreign trade will decrease.[17]

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[17] Iversen, p. 183.

The investing country could experience a rise or fall in its exports as the result of a rise or fall in its foreign investment. Initially exports could rise when a foreign investment is made since the investment expenditure could result in goods and services being shipped from the investing country to the host country or to a third country as was discussed in a previous section. Also, if the foreign investment produces a rise in the host country's income, then imports from the investing country could rise. On the other hand, if the investing country reduced its rate of foreign investment, exports could fall due to no purchases being made by the host countries and due to incomes in the host countries not rising as rapidly as before.[18] The maximum possible rise in export volume for the investing country could be partially offset, however, since the increased productive capacity in the host country could be devoted to the production of goods previously imported from the investing country or could even result in increased competition to the investing country's own export industry. Thus, it is possible for the investing country to lose some of its comparative advantage by exporting some of its capital abroad.[19]

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[18] Raymond F. Mikesell, "U. S. Postwar Investment Abroad: A Statistical Analysis," U. S. Private and Government Investment Abroad, ed. Mikesell, p. 160.

[19] Insofar as capital is complementary with other factors, and these factors are located abroad, some of the national advantage from the use of capital is lost when capital is exported. These are the views of: John M. Keynes, "Foreign Investment and National Advantage," The Nation and the Athenaeum (August, 1924), p. 586; Roy Blough, "United States Taxation and Foreign Investment," The Journal of Finance (May, 1956 , pp. 180-194; J. Carter Murphy, "International Investment and the National Interest," The Southern Economic Journal (July, 1960).

The volume of foreign trade would tend to be affected by the stage of economic development of the host country. Foreign investment in a developed country which is capable of supplying much of the necessary machinery, equipment, management and technical personnel related to the investment should yield a low initial increase in exports for the investing country. Investment in developed countries, e.g., those in Western Europe, should result in the accumulation of foreign exchange in these countries as a result of the investment. On the other hand, foreign investment in underdeveloped countries, such as those of the Latin American Republics, should result in the greatest benefit to the investing country's exports. Since the underdeveloped country is unable to furnish an adequate supply of machinery, equipment, and management and technical personnel, it must import these items from the investing country directly or indirectly and, as a result, the underdeveloped country does not accumulate much foreign exchange. Thus, export increases should be higher relative to foreign investment for underdeveloped host countries than for developed host countries.

The increase in productive capacity in the host country should result in a change in the trade composition and the geographical distribution of international trade. Since the various factors of production are combined in different proportions to make different goods and services, the transfer of capital will influence relative factor scarcity, the methods and costs of production, and the relative prices of the goods and services produced.[20] If the increased productive capacity in

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[20]Iversen, p. 452.

the host country is in consumer goods production, then their imports of this type of good should be reduced. If the increase in productive capacity is in the production of raw materials, then their exports of this item should rise. To the degree that one country's imports are another country's exports, changes in the pattern of imports and exports for the investing and host countries constitute a change in the pattern or composition of world trade. Thus, not only will the composition of international trade change, but also the geographical distribution of trade will change as the underdeveloped countries become more industrialized.

Conclusion. An interesting conclusion is arrived at when considering the various ramifications of capital movements and their effect on the reallocation of the factors of production. If factor distribution is unequal throughout the international economy, the returns to these factors in each country should be unequal and there is a case for international specialization according to the doctrine of comparative advantage. Without foreign investment, capital-poor countries will specialize in labor and resource intensive products. However, the effect of foreign investment, if carried far enough, is to reduce such specialization in production, to produce changes in the volume and direction of foreign trade as countries become more industrialized, and to equalize factor returns.[21]

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[21]Paul B. Simpson, "Foreign Investment and the National Economic Advantage: A Theoretical Analysis," U. S. Private and Government Investment Abroad, ed. Mikesell, p. 508.

National Income Effect of Capital Movements

In an earlier section of this chapter it was shown that foreign investment results in the transfer of real goods and services from the investing country to the host country either directly or indirectly. The effect on the level of national income of the investing and host countries of this real transfer can best be explained by using conventional national income analysis. The following discussion will: (1) review the operation of the foreign trade multiplier and its effect on national income, (2) review the importance of the host country's stage of economic development in considering the national income effect of foreign investment, and (3) compare the national income effect of domestic versus foreign investment for the investing country.

Foreign trade multiplier. The foreign trade multiplier theory states in effect that if there is an autonomous increase in a country's level of exports, there will be an ultimate increase in that country's level of national income which is a multiple of the initiating autonomous increase in exports. This relationship between a change in the level of a country's exports and the resulting change in its national income is shown by the following formula:

$$\Delta Y = \Delta X \cdot \frac{1}{s + m}$$

where ΔY = change in national income of the exporting country, ΔX = autonomous change in exports, s = marginal propensity to save, and m = marginal propensity to import. The assumptions necessary for this relationship are: (1) all prices, exchange rates, and interest rates remain unchanged, (2) the possibility of unlimited financing of balance

of payments deficits, and (3) the marginal propensities to save and import are constant.

If the exporting country (A) is small relative to the world economy, the foreign trade multiplier is sufficient to describe the increase in its national income. However, if country A is large relative to the world economy, e.g., the United States, the rise in its national income resulting from the multiplier effect is sufficient to increase its exports, thereby increasing the incomes of countries that supply its imports. When these foreign countries' incomes rise, they in turn import more goods and services produced by A which makes A's exports rise. The foreign trade multiplier that takes into consideration such foreign repercussions, otherwise known as the "play-back" effect, is expressed as:

$$\Delta Y = \Delta X \cdot \frac{1}{s_a + m_a + m_b \cdot \frac{s_a}{s_b}}$$

where ΔY = change in national income of the exporting country, ΔX = autonomous change in exports, s_a = marginal propensity to save of the exporting country, s_b = marginal propensity to save of the foreign country, m_a = marginal propensity to import of the exporting country, and m_b = marginal propensity to import of the foreign country.[22]

The following section will discuss the different effects of the foreign trade multiplier on the level of national income when the stage of economic development of the host country is taken into consideration.

Stage of economic development of the host country and the national income effect of foreign investment. Earlier in this chapter it was

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[22] Paul T. Ellsworth, The International Economy (New York, 1958), p. 228.

pointed out that when a foreign investment takes place the investing country assigns part of its purchasing power to the host country with the ultimate result being a transfer of real goods and services from the investing to the host countries either directly or indirectly. The speed of the culmination of the real transfer, however, is determined by the stage of economic development of the host country, other things equal. Following is a discussion of this point.

If the host country is at a relatively low stage of economic development and unable to produce domestically part of the plant and equipment comprising the investment facilities, then there will be no multiplier effect on the host country from the investment. The only multiplier effect in the host country which could result from the investment would be related to that portion of the investment which was produced domestically in the host country. Therefore, foreign investment in a country at a relatively low stage of economic development should result in a high level of flow of exports from the investing country to the host country which will result in the full foreign trade multiplier effect on the investing country's income.

If the host country is, on the other hand, at a relatively high stage of economic development and able to produce domestically all or part of the plant and equipment comprising the investment facilities, then there will be a multiplier effect in the host country which will be related to the portion of the investment which is produced in the host country plus that arising from any induced investment. Foreign investment in a relatively developed host country should not result in a significant increase in exports from the investing country and a consequent low

immediate multiplier effect on the level of national income of the investing country.

From the above it would appear that the investing country only experiences the full multiplier effect on its foreign investment when the investment is made in a relatively underdeveloped country. This, however, is not the case since when the income in the relatively developed host country rises as a result of a large portion of the investment facilities being produced in the host country plus any attendent induced investment, the level of the host country's imports rises in proportion to the rise in income times the host country's marginal propensity to import. Thus, exports from the investing country are increased over time with the ultimate full multiplier effect in the investing country. The same situation would be true of the relatively underdeveloped host country. Thus the full multiplier effect is ultimately realized by the investing country both in the case where the host country is relatively underdeveloped or developed. The big difference between the two cases is the time element involved, i.e., the full multiplier effect will be realized quicker in the investing country in the case where the foreign investment is made in a relatively underdeveloped country rather than in a relatively developed country.

National income effect of domestic versus foreign investment for the investing country. From a cosmopolitan point of view, the transferring of real capital from one country to another to seek a higher return on investment will result in an overall increase in total world income. However, from the point of view of the investing country, there may not necessarily be a direct stimulus to the investing country's

industries from foreign investment in a manner similar to the effect of domestic investment on the investing country's industries and the British experience in foreign investment up to around 1875 is a case in point. The rapid growth in exports of "railway iron" up to that time was possibly more the result of the general growth of industrialization abroad than to foreign investment; Britain was simply the only place that "railway iron" could be purchased. "The relation between foreign investment and the export of capital goods was neither close nor direct."[23]

Subsequent British experience from 1901 to 1911 shows that loans to Argentina for railroads only yielded thirty-five percent in additional exports, loans for railroads in Canada resulted in only six percent being spent outside of Canada, and investments in mining in South Africa only yielded an increase in British exports of thirty-five percent. Professor Viner writes, "For most forms of capital investment a large part of the expenditures is for wages and transportation services and not for material and equipment, and much of the material required is often necessarily of a local character."[24]

From the above discussion it can be seen that foreign investment would have the same effect as domestic investment on the domestic industries and the national income of the investing country if all of the investment funds were spent on purchases of goods and services that can enter into international trade, i.e., finished consumer goods, semi-fabricated goods and raw materials, and movable producers goods. The

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[23]Buchanan, pp. 127-128.

[24]Ibid., pp. 129-131.

movement of these goods affects the "real transfer" of capital referred to earlier. Thus, foreign investment can raise incomes only in those industries whose products can move in foreign trade.

The basic difference between foreign investment and domestic investment is that domestic investment has, in addition to the possibility of entering the spending stream in the form of purchases of movable goods and services, two additional avenues by which to enter the spending stream: (1) through purchases of certain service industries which have to be locally supplied and consumed, e.g., food and shelter for workers, and (2) through purchases of certain immovable producer's goods, especially products of construction, e.g., an excavation for a building foundation. Since foreign investment cannot be spent directly in the investing country's domestic immovable capital goods industry, it is less helpful to the investing country's domestic employment and income than domestic investment. This can be illustrated by an example. If a domestic firm invests in a power plant in a foreign country, there is no way by which a large portion of the construction activity abroad can directly stimulate the domestic construction industry, e.g., it is impossible to export an excavation for a building foundation. A similar investment made in the domestic economy, on the other hand, would stimulate the entire construction industry.[25] However, as income rises in the host country as the result of the investment, imports into the host country should also rise. Thus, exports from the investing country are increased over time with the ultimate full multiplier effect. From the

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[25]Ibid., pp. 144-147.

above discussion it is easy to see that there are many facets to the problem of analyzing the effect of the capital transfer on the investing and host countries' national income.

Summary. The investing country experiences a multiplier effect on its national income when its exports rise regardless of whether all or a portion of the plant and equipment comprising the foreign investment are produced in the investing country. The host country enjoys a multiplier effect on its national income to the degree that it is able to produce domestically the plant and equipment comprising the foreign investment and furnish services connected with the new installation. The multiplier effect on the investing country's national income takes less time when the foreign investment results in the immediate export of plant and equipment from the investing country; when a large portion of the plant and equipment is produced domestically in the host country the multiplier effect is slower.

Balance of Payments Effect of Capital Movements

The balance of payments for a country is the comparison of a flow of payments for goods and services out of a country to a flow of payments for goods and services into a country during a given time period. The long-term effect of capital movements, i.e., foreign investment, on a country's balance of payments can be separated into three stages: (1) the immediate effect of the foreign investment, (2) the consequences of the new productive capacity abroad which results from the foreign investment, and (3) the return flow of earnings and principal payments from the foreign investment.[26] These three stages are discussed below.

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[26]Salant, et al., pp. 142-145.

Immediate effect of foreign investment. Private foreign investments may have a rather significant role in immediately stimulating exports from the investing country. Indeed, Haberler states that when a foreign investment is made "...there will be first an increase of imports /for the host country/ and later, spread over a series of years, an increase in exports /for the host country/. The increase in imports may come about because the new capital is used directly to import means of production or may come about through the usual working of the transfer-mechanism. The import of capital leaves a long-lasting impression upon the balance of payments, owing to the subsequent interest and amortization payments which must be made upon it."[27]

It was established earlier that the act of foreign investment results eventually in the transfer of real goods and services abroad. Thus, while foreign investment is taking place, a trade surplus should be experienced by the investing country which, in balance of payments accounting, is directly offset by the import of securities or direct ownership of foreign properties. As long as the foreign investment takes the form of real goods and services equal in value to the money value exported, there are no immediate foreign exchange complications.[28] However, the relationships between foreign investment and exports are extremely varied, depending on: (1) the many forms which such investments assume, and (2) the level of economic development of the host country or other possible supplying countries. The effect of the type of

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[27]Gottfried von Haberler, The Theory of International Trade (New York, 1937), p. 276.

[28]Simpson, p. 512.

foreign investment on exports from the investing country will be discussed in the next section dealing with the consequences of the new productive capacity abroad which results from the foreign investment. The effect of the stage of economic development and the elasticity of supply of the host country on exports from the investing country will be discussed below.

Earlier in this chapter it was pointed out that foreign investments in underdeveloped countries would probably yield an increase in exports of plant and equipment from the investing country since the underdeveloped economy would probably not be able to produce these items domestically. On the other hand, if the foreign investment is made in a relatively developed country capable of supplying much of the plant and equipment, i.e., a country with an elastic supply curve, the immediate rise in the investing country's exports should be less than in the case where the investment was made in the underdeveloped country, i.e., a country with an inelastic supply curve. Therefore the degree of elasticity of supply is highly important in its effect on the level of exports from the investing country. If the host country has a highly inelastic supply curve for the items necessary for the foreign investment, they will have to be imported either from the investing country or other supplying countries. If the supply curves for the supplying countries other than the investing country are relatively inelastic, then the items must come from the investing country. On the other hand, if the supply curves for the host country and/or the other supplying countries are relatively elastic, then it is possible that the rise in exports from the investing country would be less than if the supply curves of the host and/or other possible supplying countries were relatively inelastic.

The immediate effect of foreign investment on the investing country's balance of payments is not only in terms of the export of capital goods but also of consumer goods. The 19th century foreign investment experience of the British is shown by Cole when he wrote that the

> ...export of British capital stimulated the demand for exports, not only of capital goods, but of consumer's goods as well. Loans made by British investors were used not only to pay for the still, for the most part, unrivalled products of the British steel and engineering industries, but also to pay wages and meet other changes in the borrowing countries, with the consequence that the recipients spend a substantial part of them on British textiles and other British-made consumer's goods. British investors supplied a good deal of the working as well as the fixed capital for overseas economic development; and as long as these conditions continued, the export of British capital and the export of British manufactures advanced by parallel steps.[29]

Consequences of new productive capacity abroad. The second stage of the effect of foreign investment on the investing country's balance of payments is described as the consequences of the new productive capacity abroad. The effect of foreign investment on a country's balance of payments as a consequence of the new productive capacity beginning operations is somewhat complex to analyze and depends a great deal on the type of investment involved. In the first place, if the foreign investment is for the purpose of constructing productive capacity for goods which will be exported, e.g., goods sold on the world market, or sold domestically to replace previously imported goods, then this type of investment will earn a net balance of payments surplus for the host country and concomitantly a deficit for the investing country. This is

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[29] G. D. H. Cole, Money, Trade and Investment (London, 1954), p. 178.

offset eventually by the income effect generated by the balance of payments surplus, i.e., the foreign trade multiplier. On the other hand, if the foreign investment is for the purpose of constructing productive capacity for goods sold on the domestic market of the host country which replace similar goods previously produced and sold domestically or goods sold abroad which were previously sold abroad, e.g., investment to replace depleted or destroyed capacity, then this type of investment will result in a zero balance of payments surplus for the host country even when considering the income effect, which remains unchanged. The third situation is when the foreign investment is for the purpose of constructing productive capacity for goods sold on the domestic market in addition to those previously sold and in excess of the increase in demand owing to the rise in income, e.g., new social overhead capital, slum clearance, etc., then there will be an export deficit.[30]

If a foreign investment results in the earning of an export surplus for the host country, as in the first case above, this will undoubtedly result in an immediate adverse effect on the investing country's balance of payments especially in the case of investment in the extractive industries. Not only will the new productive capacity in the finished goods industries in the host country result in increased competition abroad for the investing country's export industries, due to the built-in advantage in transportation costs and possible tariff advantage of the host country's firms, but these same host country firms could actually

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[30] J. J. Polak, "Balance of Payments Problems of Countries Reconstructing with the Help of Foreign Loans," The Quarterly Journal of Economics, LVII (February, 1943), pp. 216-218.

export goods to the investing country and thereby compete with the investing country's firms in their own markets. On the other hand, it could be argued that if the investing country did not make foreign investments in the host country, firms from third countries may invest in their place with the same result. Thus, the investing country would not only have the same increase in competition in foreign and domestic markets, but would probably be deprived of the initial exports which would result from the foreign investment since third country firms would probably be more prone to purchase their plant and equipment from their own country.

Return flow of earnings and principal. The third stage of the effect of foreign investment on the investing country's balance of payments is described as the return flow of earnings and principal payments from the foreign investment. After the foreign investment is made, there will be a return flow of real goods to the investing country to service the capital obligations of the host country, i.e., to pay for dividends, earnings, and to amortize the principal. Thus, when foreign investments are made it is seldom realized that the lending country must allow an additional import in future years from the host country in order for the host country to service the investment unless the investor becomes a permanent resident of the host country.[31] Therefore, it is extremely difficult to measure the

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[31] Iversen, p. 92.

relationship between foreign investment and exports, and the attaining of a new equilibrium situation following an outflow of investment capital may take longer than the span which is usually considered in evaluating equilibrium conditions in the balance of payments.[32]

An example constructed by the Brookings Institution showing the estimated balance of payments effect of $1,000 of direct investment in manufacturing facilities is shown in Table V.[33] In this table an initial investment was made in the zero year and the cumulative effect of the investment is shown for the next ten years. By considering the income earned on the investment, the exports from the investing country induced by the investment less induced imports, an "Annual Net Effect" total is shown (line 7), which when accumulated from year to year (line 8), shows that the initial outflow of $1,000 made in year zero is "payed back" between the fifth and sixth year. Thus, for the years succeeding the fifth year, there should be a net positive benefit to the investing country.

In the third stage of the effect of foreign investment on the investing country's balance of payments, the return flow of funds to service the foreign investment requires a transfer of purchasing power from the host country to the investing country which sets in operation a mechanism of the same type as the original transfer of capital in the opposite direction. If the sums due the host country on the earnings and amortization accounts at any time balance the new investments, then no transfer of buying power is required. However, it must be pointed out

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[32]Salant, et al., p. 121.

[33]Ibid., p. 144.

TABLE V

ESTIMATED BALANCE-OF-PAYMENTS EFFECTS OF $1,000 OF DIRECT INVESTMENT IN MANUFACTURING FACILITIES IN EUROPE

Item	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
				(dollars)							
(1) New Direct Investment[a]	1,000	0	0	0	0	0	0	0	0	0	0
(2) Cumulative Direct Investment End of Year	1,000	1,081	1,169	1,264	1,366	1,477	1,596	1,725	1,865	2,016	2,179
(3) Export Stimulus	0	106	115	124	134	145	157	169	183	198	214
(4) Royalties and Fees	0	23	25	27	29	31	34	37	40	43	46
(5) Repatriation Earnings	0	87	94	102	110	119	128	139	150	162	175
(6) Import Stimulus	0	-65	-70	-76	-82	-89	-96	-104	-112	-121	-131
Balance of Payments:[b]											
(7) Annual Net Effect	-1,000	151	164	177	191	206	223	241	261	282	304
(8) Cumulative Effect	-1,000	-849	-685	-508	-317	-111	112	353	614	896	1,200

[a]It is assumed that the investment was made at the end of year 0.

[b]Excluding (1) related export stimulation, (2) American import replacement of foreign-owned production by American-owned production, and (3) displacement of U. S. exports by American-owned foreign production.

Note: Line 2 = Line 2 for preceding year 8.0 percent (retained earnings of current year).
Line 3 = 10.6 percent of investment (Line 2 of preceding year).
Line 4 = 2.3 percent of investment (Line 2 of preceding year).
Line 5 = 51.8 percent of total earnings, which are assumed to be 16.8 percent of investment making retained earnings 8.7 percent of investment (Line 2 of preceding year).
Line 6 = 6.5 percent of investment (Line 2 of preceding year).
Line 7 = Lines 1 + 3 + 4 + 5 + 6.

that the foreign firm may not repatriate the earnings from the foreign investment, but rather choose to use the earnings for reinvestment in new capacity and for expanded working capital. From this point of view of the mechanism of international trade, it is this net movement of capital which deserves special attention.[34]

Summary

The purpose of this chapter was to inquire into the theoretical aspects of the phenomenon of foreign investment for the purpose of ascertaining what economic theory indicates to be the cause and effect of foreign investment on the investing country and the country in which the investment is made. The theoretical exposition serves as the analytical framework for measuring the relationship between a country's foreign investment and its balance of payments.

Foreign investment results in the transfer of real goods and services from one country to another and this transfer affects a reallocation of resources in both the investing and the host countries. The repercussion of the reallocation of resources produces changes in: (1) the methods, costs, and volume of production, (2) relative factor scarcity and their prices, (3) the terms of trade, and (4) the volume and composition of international trade.

Economic theory shows that whenever capital resources move from a country where the MPP of capital is low to a country where the MPP of capital is high, the total income in the world economy is increased since

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[34]Ohlin, p. 451.

capital resources are being used more efficiently. Incomes in the world economy also rise as the result of the multiplier effect related to exports from the investing country and induced domestic investments in the investing and/or host countries.

The effect of the international transfer of real capital on the balance of payments of the investing country may be separated into three stages. In the first stage, there is the immediate effect on the investing country's balance of payments of creating an export surplus, assuming an initial situation of external equilibrium. In the second stage, there is the consequence of the new productive capacity abroad which results from the foreign investment. In the third stage, there is the return flow of earnings and principal payments from the foreign investment. This consists of the transfer of purchasing power from the host country back to the investing country which can only be made possible by the host country being able to eventually earn a balance of payments surplus.

The discussion in this chapter has endeavored to lay the theoretical foundation for developing working hypotheses concerning the relationship between U. S. foreign investment and the U. S. balance of payments. The hypotheses and methodology for examining the hypotheses are discussed in the following chapter.

CHAPTER IV

THE PLAN OF THE ANALYSIS

Introduction

In the theoretical exposition in the preceding chapter regarding the beneficial relationship between a country's foreign investment and its balance of payments, no clear-cut relationship emerged for or against foreign investment. The reasons for not being able to come to a definite theoretical conclusion possibly stem, for example, from the different types of foreign investment involved, i.e., direct or portfolio, the stage of economic development of the host countries, and the difference between short-term and long-term effects.

The purpose of this chapter is to outline a plan for a step by step analysis of U. S. foreign investment and its relationship to the U. S. balance of payments during the period 1950 through 1962. The plan of the analysis will: (1) develop working hypotheses which provide a tentative explanation of the quantitative relationship between U. S. foreign investment and the U. S. balance of payments, (2) determine the appropriate variables to be used in the analysis, (3) set forth the analytical techniques to be used, and (4) state the criteria to be used in accepting or rejecting the hypotheses.

The Hypotheses

Based on the a priori reasoning of economic theory in Chapter III and selected studies discussed in Chapter II, certain tentative relationships emerge between foreign investment and the balance of payments which, if stated as hypotheses and successfully substantiated by analysis, should provide the basis for developing an answer to the statement of the problem, "Is long-term private foreign investment detrimental to the U. S. balance of payments in the long-run?" At this point, it should suffice to say that hypotheses cannot definitely be proved or disproved; tests of hypotheses mostly lend support or cast doubt on the hypotheses.[1]

There were three hypotheses developed from the discussion in Chapters II and III above which have a direct relationship to the problem under study. These hypotheses are stated as negative or null hypotheses and are as follows:

I. U. S. foreign investment was not beneficial to the U. S. balance of payments for the period from 1950 through 1962.

II. There was no difference between the benefits to the U. S. balance of payments received from U. S. direct foreign investment and U. S. portfolio investment for the period from 1950 through 1962.

III. There was no difference between the benefits to the U. S. balance of payments received from foreign investment placed in relatively developed countries and relatively underdeveloped countries for the period from 1950 through 1962.

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[1] Robert Ferber, Statistical Techniques in Market Research (New York, 1949), p. 106.

Definition of the Variables[2]

In Chapter I, reasons for limiting the study to the private long-term aspects of the problem were set forth. In general, the reason for excluding government sponsored exports and capital movements was that these items were usually the result of U. S. foreign policy and are outside the realm of economic analysis. The reason for excluding short-term capital movements was that these types of movements were usually the result rather than the cause of balance of payments disequilibria. Unilateral transfers, private, are also excluded from the analysis since these transfers involve no quid pro quo and are usually not economically determined, e.g., remittances of foreign deposits to relatives or charitable organizations abroad. Therefore, the variables which will be used for the analysis are those which represent private long-term exports and private long-term outflow of capital and inflow of investment income. These variables and their definitions are listed below with their code designation shown in the general form of X_n.

Private long-term direct foreign investment (X_1). Private long-term direct foreign investment, subsequently referred to as direct foreign investment, is a capital movement which results in increases in U. S. equity in foreign incorporated companies in the management of which U. S. investors have an important but not necessarily controlling voice and in the direct branches abroad of U. S. companies. The tests of voice in management are as follows: (a) a holding of 25 percent or more of the voting stock of the foreign corporation by one company (or

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[2]The following definitions are taken from U. S. Department of Commerce, The Balance of Payments of the United States, 1949-1951 (Washington, 1952), pp. 19-99.

person), either directly or through domestic affiliated corporations, (b) it sometimes includes ownership with less than 25 percent, but is concentrated in one or a few holders, or (c) where there is no single large American interest but the securities are so widely held that a relatively small holding may represent an important voice in management.

Private long-term portfolio foreign investment (X_2). Private long-term portfolio foreign investment, subsequently referred to as portfolio foreign investment, is regarded as U. S. purchases of stocks, bonds, real estate, etc., where ownership does not constitute an important voice in the management of an enterprise, but are held primarily as a source of income; this variable includes the accounts "New Issues of Foreign Securities," which is comprised of both public and private offerings of bonds and stocks not connected with U. S. direct foreign investments, and "Redemptions," which shows the total of the called or matured foreign securities and sinking fund purchases of foreign securities in the U. S.

Time (X_3). The variable "time" is included for the purpose of accounting for many other variables for which data were not always uniformally available for each data classification. Variables accounted for by the time variable would be population change, long-term interest rates, changes in national income, price level differences, etc., which may exist between the U. S. and the other countries of the world.

Total merchandise exports (X_4). Total merchandise exports is the sum total of the four following variables: merchandise exports, transportation, travel, and miscellaneous services, private.

Merchandise exports (X_5). Merchandise exports include all moveable goods which are sold or otherwise transported from the U. S. to foreign ownership; private exports include those goods transferred from the ownership of private U. S. residents to foreign ownership. Since economic theory indicates that there should be some increase in exports caused by foreign investment, merchandise exports are essential to the analysis.

Transportation (X_6). This variable is included in the analysis for the purpose of ascertaining the stimulus given to the U. S. international transportation industry by the possible change in the level of merchandise exports caused by U. S. foreign investment. The variable transportation covers international transactions arising from the transportation of goods and passengers, including carriage by ocean and inland waterway shipping, air, rail, and pipeline transportation; it includes charter vessels, rental of freight cars, and expenses of transportation companies consisting of purchases outside their own countries of goods and services.

Travel (X_7). The variable travel is made up of the expenditures made in the U. S. by foreign travelers for lodging, food, amusements, gifts, and other personal purchases. This variable is included for the purpose of ascertaining if there is any positive relationship between U. S. foreign investment and the level of foreign travel expenditure in the U. S. It is possible that the stimulus of U. S. foreign investment could result in increased foreign travel in the U. S. for foreign personnel related to the investment or the income effect in the foreign country caused by the U. S. investment could induce foreigners to travel abroad.

Miscellaneous services, private (X_8). The miscellaneous services, private variable consists of all private service transactions not already covered in the definitions of travel, transportation, and merchandise above; it includes items such as, communications expenditures, e.g., cable, radio, and telephone, all premiums paid to and claims received from foreign insurance companies, motion picture rentals, engineers and contractors services, home office charges, rentals, royalties, etc. This variable is included since it is possible that U. S. foreign investment could stimulate this type of activity by increasing the demand for U. S. consultants, rental of U. S. equipment, and the payment of royalties for the use of U. S. copyrighted or patented processes.

Income on private long-term direct foreign investments (X_9). Income on private long-term direct foreign investments, subsequently referred to as income from direct foreign investment, includes all interest, rent, dividends, and branch profits effectively paid or credited during the period after payment of all taxes in the country of the payer, including income or profits taxes paid by the foreign enterprise and any taxes withheld at the source or otherwise paid by the recipient on dividends or other income payments between the U. S. and foreign countries. This variable is included since one of the benefits from foreign investments is the return flow of income from the investment. It does not include reinvested income.

Income on private long-term portfolio foreign investment (X_{10}). Income on private long-term portfolio foreign investment, subsequently referred to as income from portfolio foreign investment, includes income

earned on foreign bonds denominated in foreign currencies and stocks issued by foreign corporations which are not U. S. direct-investment corporations, loans by banks and financial institutions, miscellaneous assets such as commercial real estate, insurance policies, trusts and estates, mortgages, etc. The reason for including this variable is the same as for including income on private long-term direct foreign investment, *viz.*, it is one of the benefits from foreign investment.

Classification of the Data

The Department of Commerce provides foreign investment data broken down into the five following geographic classifications: (1) World, (2) Western Europe, (3) Canada, (4) the Latin American Republics, and (5) All Other Countries. Although these classifications do not represent a very detailed breakdown of foreign investment, they lend themselves very well to the analysis of the relationship between foreign investment and the U. S. balance of payments. The relationships developed by the analysis of U. S. foreign investments and its balance of payments vis-a-vis the World can be used to compare similar relationships developed for the U. S. vis-a-vis Western Europe, Canada, the Latin American Republics, and All Other Countries.

Data broken down into the above five classifications also make it convenient to test the hypotheses dealing with the differential effects of foreign investment made in developed versus underdeveloped countries. In the classification used above, the relatively well developed industrial countries of Western Europe can be compared to the relatively well developed primary producing country of Canada, the relatively

underdeveloped primary producing countries of the Latin American Republics, and the remainder of the relatively underdeveloped primary producing countries of the world in the category of All Other Countries, with the possible exception of Japan and Australia in the latter group.

Analysis Techniques and the Criteria for Acceptance of the Hypotheses

In order to determine if the actual foreign investment and balance of payments experience of the U. S. for the period 1950 through 1962 substantiates the three hypotheses, it is necessary to analyze the data for that period in such a manner as to make them comparable to the hypotheses. The first analysis technique is designated as non-statistical. This term is used to indicate that there is no probability basis for the analysis. The second analysis technique is designated as statistical which indicates that the analysis does have a probability basis. These two analytical techniques and the criteria for acceptance of the hypotheses are discussed below.

Non-statistical analysis. The non-statistical analysis consists of two steps. The first step is to compute the private long-term balance of payments for the U. S. vis-a-vis the five data classifications listed above using the variables discussed earlier in the chapter for the entire thirteen year period of the study. The second step will be to compute the ratio of foreign investment income inflow (X_9 plus X_{10}) to foreign investment outflow (X_1 plus X_2) for each year for each of the five balance of payment series. A ratio that is greater than 1.0 would indicate that foreign investment income inflow was greater than foreign investment outflow and the U. S. balance of payments position

was not adversely affected by foreign investment in that year. A ratio which is less than 1.0 would indicate the opposite situation. The advantage of computing the ratios is that it makes the relative difference between foreign investment income inflows and foreign investment outflows easier to see for comparison purposes. It does not imply any causal relationship but merely a relative ex post measurement.

The ratios will be used to examine the three hypotheses in the following ways:

1. Hypothesis I--if the ratios are greater than 1.0 for a majority of the years included in the study ~~and the mean value of the ratios, or the adjusted mean value of the ratios when there were extreme values present for the period are greater than 1.0 for~~ total, direct, and portfolio ~~foreign investment~~, the hypothesis would be considered to be false and foreign investment would be accepted as being beneficial to the U. S. balance of payments. The mean values of the ratios are to be adjusted by excluding extreme ratios which are judged to be atypical for the time period and would tend to distort the ratio means.
2. Hypothesis II--ratios cannot be used to make comparisons between time series of different absolute magnitudes for the purpose of trying to ascertain which type of foreign investment yields the most benefit to the U. S. balance of payments. Such a comparison would be grossly misleading since it is possible for one type of foreign investment to have a ratio of 1.10, for example, but an absolute difference of $100 million

greater income inflow than investment outflow while another type of foreign investment would have a ratio of 2.0, for example, but only have an absolute difference of $50 million greater income inflow than investment outflow. In this case it would appear that the second type of foreign investment would be most beneficial when the reverse is the real situation.

3. Hypothesis III--if the mean or the adjusted mean values of the ratios, when there were extreme values of the ratios present, for total, direct, and portfolio foreign investment display a pattern of ratios which is higher for relatively developed than for underdeveloped countries, the hypothesis would be considered to be false and the level of economic development of the host countries would be considered as having an effect on the relationship which existed between foreign investment and the U. S. balance of payments.

Statistical analysis. The statistical analysis will consist of making a least squares multiple regression analysis for the purpose of measuring the mathematical relationship between U. S. foreign investment and the categories of U. S. exports (X_4, X_5, X_6, X_7, X_8, X_9 listed earlier in the chapter) for the U. S. vis-a-vis the five data classifications listed above.[3]

The independent variables for the analysis will be Direct Foreign Investment (X_1), Portfolio Foreign Investment (X_2), and Time (X_3). The

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[3]An excellent source of information on multiple regression analysis is Mordecai Ezekiel and Karl A. Fox, Methods of Correlation and Regression Analysis, Third Edition (New York, 1959).

dependent variables will be Total Merchandise Exports (X_4), Merchandise Exports (X_5), Transportation (X_6), Travel (X_7), and Miscellaneous Services, Private (X_8). The multiple regression analysis will be computed using the three independent variables with each dependent variable for each of the five data classifications listed above. In all, there will be twenty-five multiple regression analyses made with four variables in each analysis (three independent and one dependent variable).

The measures resulting from the multiple regression analysis are both absolute and relative. The absolute measure resulting from the multiple regression analysis takes the form of an equation showing the absolute relationship between the independent and dependent variables. The general form of the equation is:

$$X_n = a + b_{n1.23} X_1 + b_{n2.13} X_2 + b_{n3.12} X_3$$

where X_n = the various dependent variables, i.e., X_4, X_5, X_6, X_7, and X_8, a = a constant, $b_{n1.23}$ = net regression coefficient which shows the effect of changes in X_1 on X_n holding X_2 and X_3 constant at their mean values, $b_{n2.13}$ = net regression coefficient which shows the effect of changes in X_2 on X_n holding X_1 and X_3 at their mean values, $b_{n3.12}$ = net regression coefficient which shows the effect of changes in X_3 on X_n holding X_1 and X_2 at their mean values, and X_1, X_2, and X_3 are the independent variables direct foreign investment, portfolio foreign investment, and time, respectively. The net regression coefficients will be tested for statistical significance at the .05 (significant) and .01 (highly significant) levels. Closely associated with the multiple regression equation is the multiple standard error of estimate ($S_{n.123}$) which indicates the reliability of values of the dependent

variable estimated from observed values of the independent variables using the multiple regression equation. The relationships developed by multiple regression analysis are useful for making estimates of the dependent variable for given values of the independent variables and for computing the relative measures described below for examining the hypotheses.

The relative measures which are computed from the multiple regression analysis are as follows:

1. The multiple determination coefficient (R^2) is a relative measure indicating the percentage of the total variation in each dependent variable which is explained by the three independent variables combined. The measure will be tested for statistical significance at the .05 (significant) and .01 (highly significant) levels. A high value of R^2, e.g., over .90, which is either significant or highly significant would indicate that there was a close relationship between the independent and the dependent variables during the thirteen year period.
2. The partial determination coefficient (r^2) is a relative measure indicating the approximate percentage of the variation in the dependent variable which is explained by each independent variable taken separately, holding the other independent variables constant at their mean values. The partial determination coefficients take the general forms of:

$$r^2_{y1.23} = \frac{R^2_{y.123} - R^2_{y.23}}{1 - R^2_{y.23}}$$

$$r^2_{y2.13} = \frac{R^2_{y.123} - R^2_{y.13}}{1 - R^2_{y.13}}$$

$$r^2_{y3.12} = \frac{R^2_{y.123} - R^2_{y.12}}{1 - R^2_{y.12}}$$

where y = the dependent variable, R^2 = the multiple determination coefficient for the variables indicated, and the subcripts 1, 2, and 3 indicate the independent variables X_1, X_2, and X_3, respectively. The r^2 measures indicate the relative importance of each of the independent variables in explaining variations in the dependent variables with a high value of r^2 indicating a high degree of explanation of the variation in the dependent variable attributed to a particular independent variable.

3. The beta coefficient indicates the relative importance of each of the independent variables in explaining variations in the dependent variables. It is expressed as follows:

$$\beta = b_{yz} \cdot \frac{S_z}{S_y}$$

where β = beta, b_{yz} = the net regression coefficient associated with the independent variable X_z and the dependent variable X_y, S_z = standard deviation of X_z, and S_y = standard deviation of X_y. The beta coefficients are used to supplement the partial

determination coefficients in indicating the relative importance of each independent variable in explaining variations in the dependent variable.

4. The elasticity coefficient is the percentage change in a dependent variable that is associated with a one percent change in a specific independent variable, holding the other independent variables constant at their mean values. Such a coefficient is valid only for small percentage changes in the independent variable and provides a simple measure of the sensitivity of the dependent variable to changes in the independent variable. It is expressed by the following relationship:

$$\xi = b_{yz} \cdot \frac{\overline{X}_z}{\overline{X}_y}$$

where ξ = elasticity, b_{yz} = the net regression coefficient associated with the independent variable X_z and the dependent variable X_y, $\overline{X}_z$ = the mean value of the independent variable, $\overline{X}_y$ = the mean value of the dependent variable.

The absolute and relative measures derived from the multiple regression analysis will be used to examine the three hypotheses in the following ways:

1. Hypothesis I--if the coefficient of multiple determination (R^2) is significant at the .05 level which would indicate that a correlation exists between the independent variables and the dependent variables, the hypothesis under examination will be considered to be false and foreign investment will be considered

to be beneficial to the U. S. balance of payments. This procedure will be repeated for each dependent variable for each of the five data classifications.

2. Hypothesis II--if the net regression, partial determination, beta, and elasticity coefficients are consistently higher for the same type of foreign investment, i.e., direct or portfolio foreign investment, in relation to each of the dependent variables, the hypothesis under examination will be considered to be false and the type of investment associated with the consistently higher coefficients will be considered to be the more beneficial to the U. S. balance of payments.
3. Hypothesis III--the multiple regression analysis is not applicable to examining the third hypothesis since the coefficients are not suitable for interclassification comparisons.

Problems related to multiple regression analysis of time series. In computing a multiple regression analysis of time series there are two important problems which may tend to reduce the degree of significance of the results of the analysis. These two problems are: (1) serial or autocorrelation, which is defined as the correlation between a series of observations and the same series lagged by one or more units of time, and (2) intercorrelation which refers to relatively high levels of correlation between the independent variables.[4] These problems will be discussed below.

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[4]An excellent source of information on autocorrelation is Richard J. Foote, Analytical Tools for Studying Demand and Price Structure, U. S. Department of Agriculture Handbook No. 146 (Washington, August, 1958); on intercorrelation the reader is directed to Karl A. Fox and James F. Cooney, Jr., Effects of Intercorrelation Upon Multiple Correlation and Regression Measures, U. S. Department of Agriculture (Washington, April, 1954).

The problem of autocorrelation is important since most statistical analysis involving probability measures or statistical tests of significance are based on the assumption that there is a mutual independence among the successive unexplained residuals, i.e., the difference between the actual observation and its computed value using the regression equation. Possible causes of nonindependence of the residuals are: (1) the presence of data biased in a certain direction, (2) variables excluded from the analysis due to there being no data with which they can be measured or their influence is believed to be too small to warrant their inclusion, or (3) that two or more of the same variables are tending to follow the same trend pattern. In this analysis, trend is included as an independent variable which would tend to eliminate the influence of trend as an element producing high autocorrelation. The residuals for estimating the dependent variables from the multiple regression equations will then be tested for the presence of autocorrelation using the von Neumann Ratio at the .01 and .05 levels.[5] If there is no indication of a highly significant level of autocorrelation, i.e., at the .01 level, the multiple regression equations will be considered as being free of the influences of autocorrelation.

The problem of intercorrelation poses another possible source for reducing the validity of multiple regression analysis of time series. The extreme case of intercorrelation, i.e., multicollinearity, is where two or more of the independent variables are so highly correlated that their separate effects cannot be distinguished. At the other extreme, where there is no intercorrelation, the effects of the different

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[5]Ezekiel, pp. 337-341.

independent variables are strictly additive. Increasing levels of intercorrelation are reflected in increasing standard errors of the net regression coefficients which tends to lower the reliability of the individual net regression coefficients.

In an analysis showing the effects of intercorrelation in a four variable example, i.e., one dependent variable and three independent variables, Fox and Cooney show that for given simple correlation coefficients between the independent variables and the dependent variables the stability of the beta coefficients and their standard errors increases as the level or intercorrelation falls from 0.9 to 0.1. An examination of the tables and graphs in this analysis indicates that when the level of intercorrelation rises above 0.7, the instability of the beta coefficients and the standard errors is too high to yield reliable results. However, the assumption of random variation in the residuals referred to above in the discussion of autocorrelation again is a factor in this case. Since time series data are not absolutely random observations, any measures of statistical significance are not wholly meaningful in a strict probabilistic sense. Since there appears to be no way to correct for intercorrelation, except to omit those independent variables with high intercorrelation, it will suffice to note that when the level of intercorrelation among the independent variables rises higher than 0.7, the reliability of the net regression coefficients is lowered.

Summary

The purpose of this chapter was to develop working hypotheses giving a tentative explanation of the relationships between foreign

investment and the balance of payments and to develop an analytical framework for examining the hypotheses.

There were three major hypotheses developed: (1) U. S. foreign investment was not beneficial to the U. S. balance of payments for the period from 1950 through 1962, (2) there was no difference between the benefits to the U. S. balance of payments received from U. S. direct foreign investment and U. S. portfolio foreign investment for the period from 1950 through 1962, and (3) there was no difference between the benefits to the U. S. balance of payments received from foreign investment placed in relatively developed countries and foreign investment placed in relatively underdeveloped countries for the period from 1950 through 1962.

The analytical framework consisted of determining and defining the variables, classifying the data according to different countries and regions of the world, setting forth the analytical techniques to be used, and stating the criteria to be used in accepting or rejecting the hypotheses.

The following chapter will present the results of the analysis and will indicate those hypotheses which were accepted and rejected.

CHAPTER V

THE RESULTS OF THE ANALYSIS

Introduction

In the previous chapter, the hypotheses for attempting to answer the problem stated in Chapter I were developed along with the selection of the data to be used in the analysis, the analysis techniques to be used, and the criteria for accepting or rejecting the hypotheses. The purpose of this chapter is to present the results of the analysis and to indicate which of the hypotheses were accepted or rejected.

Two types of analyses were developed; one analysis was designated as non-statistical and the other type as statistical. The first step of the non-statistical analysis was to compute the private long-term balance of payments for the U. S. vis-a-vis the five data classifications for the period 1950 through 1962. These balance of payments computations are presented in Appendix Tables I through V. From the balance of payments data, the ratio of foreign investment income inflow to foreign investment outflow was computed for total foreign investment, direct foreign investment, and portfolio foreign investment for each data classification for each year from 1950 through 1962. These ratios are presented in Appendix Tables VI through X.

The statistical analysis consisted of making a least squares multiple regression analysis for the purpose of measuring the mathematical relationship which existed between U. S. foreign investment

and U. S. exports vis-a-vis the five data classifications for the period from 1950 through 1962. The results of these multiple regression analyses are shown in Appendix Tables XI through XV.

The following discussion summarizes the results of the two analyses techniques and indicates how these results compare to the criteria for accepting or rejecting the hypotheses as outlined in Chapter IV.

Results of the Non-Statistical Analysis

The ratios computed from the balance of payments data presented in Appendix Tables I through V are shown in Table VI for total foreign investment, Table VII for direct foreign investment, and Table VIII for portfolio foreign investment for each of the five data classifications. The criteria set forth in Chapter IV for the non-statistical examination was that if the ratios were greater than 1.0 for a majority of the years included in the study and for the mean or adjusted mean value of the ratios, when there were extreme values of the ratios present, the hypothesis would be rejected. The results of the tests are as follows:

Examination of Hypothesis I. By referring to Table VI, it would appear that the hypothesis that U. S. foreign investment was not beneficial to the U. S. balance of payments for the period from 1950 through 1962 is rejected for U. S. total foreign investment made in the World, Latin American Republics, and All Other Countries since the majority of the ratios and the mean or adjusted mean value of the ratios for the period were all greater than 1.0. The ratios for Canada, however, were less than 1.0 and the hypothesis is thereby supported by the analysis. Although the mean value of the ratios for Western

TABLE VI

RATIOS OF INVESTMENT INCOME INFLOWS TO INVESTMENT OUTFLOW FOR TOTAL LONG-TERM PRIVATE FOREIGN INVESTMENT BY GEOGRAPHIC REGIONS, 1950-1962

	Ratios				
Year	World	Western Europe	Canada	Latin American Republics	All Other Countries
1950	1.33	.49	.67	41.54*	2.15
1951	1.78	1.50	.76	4.40	5.15
1952	1.52	1.99	.76	2.31	2.95
1953	3.01	n.c.	.83	5.39	3.58
1954	1.98	33.14*	.84	3.54	3.59
1955	2.04	1.76	1.52	1.89	3.84
1956	.97	.61	.47	1.26	2.92
1957	.79	.99	.49	.71	3.09
1958	.97	1.05	.55	2.02	2.02
1959	1.17	.85	.66	1.85	2.59
1960	1.13	.46	.91	2.09	3.06
1961	1.33	.62	1.26	3.14	1.65
1962	1.39	.66	1.20	7.73	2.06
Mean Ratio	1.49	3.68	.84	6.00	2.97
Adjusted Mean Ratio		.99		3.03	

*These ratios were excluded for the purpose of computing the adjusted mean ratios.

n.c. = not computable, i.e., negative figures in ratio numerators or denominators.

Source: Appendix Tables VI through X.

Europe was much greater than 1.0, this was due to a single large ratio in 1954, which when eliminated, yielded an adjusted mean ratio value of less than 1.0, plus the fact that a majority of the ratios were less than 1.0 for the period.

The ratios for U. S. direct foreign investment are shown in Table VII. The hypothesis appears to be rejected for direct investment made in the World, the Latin American Republics, and All Other Countries since the majority of the ratios and the mean or adjusted mean value of the ratios were greater than 1.0. Although the mean value of the ratios for Western Europe was greater than 1.0, a majority of the values were less than 1.0 and by the criteria set forth in Chapter IV, the hypothesis is accepted for Western Europe as well as for Canada.

Table VIII shows the ratios for U. S. portfolio foreign investment. It appears that for portfolio foreign investment the hypothesis is accepted for investments made in all five of the data classifications. Although the mean values of the ratios were greater than 1.0 for Canada, a majority of the ratios for the period were not greater than 1.0 and by the acceptance criteria, the hypothesis is accepted. The mean value of the ratios for All Other Countries was initially greater than 1.0, but when this was adjusted for the extremely large ratio in 1953, the adjusted mean value was less than 1.0 and the hypothesis is accepted.

In summary, the results of the tests of the hypothesis are shown in Table IX and indicate that the hypothesis is rejected for U. S. total foreign investment for the data classifications World, the Latin American Republics, and All Other Countries and it is accepted for Western Europe and Canada. A possible reason for this is that earnings

TABLE VII

RATIOS OF INVESTMENT INCOME INFLOW TO INVESTMENT OUTFLOW FOR DIRECT LONG-TERM PRIVATE FOREIGN INVESTMENT BY GEOGRAPHIC REGIONS, 1950-1962

	Ratios				
Year	World	Western Europe	Canada	Latin American Republics	All Other Countries
1950	2.08	.94	1.02	13.07*	2.10
1951	2.93	1.86	1.00	3.58	9.90
1952	1.66	n.c.	.52	1.98	3.09
1953	1.96	3.02	.51	4.16	3.50
1954	2.59	4.13	.58	8.43	9.13
1955	2.32	1.96	.83	4.06	5.53
1956	1.11	.62	.54	1.29	3.58
1957	.92	.94	.49	.76	3.65
1958	1.80	1.53	.75	2.14	4.37
1959	1.62	.90	.83	2.75	6.95
1960	1.39	.40	.77	6.75	6.23
1961	1.81	.74	1.50	5.04	2.64
1962	1.96	.64	1.53	n.c.	3.60
Mean Ratio	1.86	1.47	.84	4.15	4.79
Adjusted Mean Ratio				3.41	

*These ratios were excluded for the purpose of computing the adjusted mean ratios.

n.c. = not computable, i.e., negative figures in ratio numerators or denominators.

Source: Appendix Tables VI through X.

TABLE VIII

RATIOS OF INVESTMENT INCOME INFLOW TO INVESTMENT OUTFLOW FOR PORTFOLIO LONG-TERM PRIVATE FOREIGN INVESTMENT BY GEOGRAPHIC REGIONS, 1950-1962

	Ratios				
Year	World	Western Europe	Canada	Latin American Republics	All Other Countries
1950	.38	.21	.36	n.c.	n.c.
1951	.44	.95	.52	n.c.	.19
1952	.96	.44	4.34	n.c.	.80
1953	n.c.	n.c.	64.00*	n.c.	16.00*
1954	.72	n.c.	3.80	.22	.11
1955	1.07	1.19	n.c.	.16	.41
1956	.49	.60	.36	.81	.52
1957	.42	1.21	.47	.37	.76
1958	.29	.53	.38	1.31	.17
1959	.50	.68	.50	.49	.22
1960	.61	.82	1.30	.35	.36
1961	.63	.40	.99	.88	.33
1962	.66	.69	.88	.91	.48
Mean Ratio	.59	.70	6.49	.61	1.70
Adjusted Mean Ratio			1.23		.40

*These ratios were excluded for the purpose of computing the adjusted mean ratios.

n.c. = not computable, i.e., negative figures in ratio numerators or denominators.

Source: Appendix Tables VI through X.

TABLE IX

SUMMARY OF THE ACCEPTANCE OR REJECTION OF HYPOTHESIS I USING NON-STATISTICAL ANALYSIS

Type of Investment	Data Classification: World	Western Europe	Canada	Latin American Republics	All Other Countries
Total U. S. Investment	-	+	+	-	-
Direct Investment	-	+	+	-	-
Portfolio Investment	+	+	+	+	+

- = Hypothesis Rejected.

+ = Hypothesis Accepted.

in developed countries were being reinvested abroad while the earnings in underdeveloped countries were being returned to the investors. A similar pattern of rejection and acceptance was established for U. S. direct foreign investment. For U. S. portfolio investment, however, the hypothesis is accepted for each data classification. Since the hypothesis is rejected for U. S. total foreign investment in the World, Latin American Republics and All Other Countries classes, it appears that the benefits from U. S. direct foreign investments more than compensated for the negative effects of U. S. portfolio foreign investment for these data classifications.

Examination of Hypothesis II. Although there was no specific method for examining this hypothesis developed in Chapter IV some conclusions can be drawn from the examination of the first hypothesis above which can be applied to the second hypothesis. The second hypothesis stated that, "There was no difference between the benefits to the U. S. balance of payments received from U. S. direct foreign investment and U. S. portfolio foreign investment for the period from 1950 through 1962." The results of the examination of the first hypothesis which are summarized in Table IX show that U. S. portfolio investment probably was detrimental to the U. S. balance of payments since the first hypothesis was accepted for each of the data classifications. The examination also indicated that U. S. direct investment was probably beneficial to the U. S. balance of payments for the World, Latin American Republics, and All Other Countries since the hypothesis was rejected for these data classifications. Thus, it would appear that U. S. direct foreign investment was more beneficial to the U. S. balance

of payments than U. S. portfolio foreign investment. If this reasoning is accepted, the second hypothesis would be rejected, although a specific method for examining this hypothesis employing ratios could not be devised.

Examination of Hypothesis III. The third hypothesis stated that, "There was no difference between the benefits to the U. S. balance of payments received from foreign investment placed in relatively developed and relatively underdeveloped countries for the period from 1950 through 1962." The examination of this hypothesis consisted of determining if there was a pattern of the mean or adjusted mean values of the ratios for total, direct, and portfolio foreign investment which was higher for relatively developed or underdeveloped countries during the period of the analysis, the hypothesis would be considered as being false and the level of economic development of the host country would be considered as having an effect on the relationship which existed between U. S. foreign investment and the U. S. balance of payments.

By referring to Table VI, it would appear that there was a definite pattern present in the mean or adjusted mean values of the ratios for U. S. total foreign investment for the relatively developed and underdeveloped countries. The mean or adjusted mean values of the ratios for the Latin American Republics and All Other Countries appear to be greater than the mean or the adjusted mean values of the ratios for Western Europe and Canada. Thus, the hypothesis is rejected for U. S. total foreign investment.

The mean or adjusted mean values of the ratios shown in Table VII for U. S. direct foreign investment appear to follow the same pattern

shown in Table VI for U. S. total foreign investment. The mean or adjusted mean ratios for the Latin American Republics and All Other Countries were greater than those of Western Europe and Canada. Thus, the hypothesis for U. S. direct foreign investment is rejected.

Table VIII shows the mean or adjusted mean values of the ratios for U. S. portfolio foreign investment. Again the mean or adjusted mean values of the ratios appear to follow a definite pattern, except in this case, the ratios were higher for Western Europe and Canada rather than for the Latin American Republics and All Other Countries. Thus, the hypothesis is rejected.

In summary, the results of the acceptance or rejection of the hypothesis as shown in Table X indicate that there was a definite pattern of the mean or adjusted mean values of the ratios present which was higher either for the developed or underdeveloped countries. For U. S. total foreign investment, the mean or adjusted mean values of the ratios were much higher for the relatively underdeveloped countries, i.e., the Latin American Republics and All Other Countries, than for the relatively developed countries, i.e., Western Europe and Canada. The same pattern holds for U. S. direct foreign investment that was true for U. S. total foreign investment. The mean or adjusted mean values of the ratios for U. S. portfolio foreign investment displayed a pattern which was higher for the relatively developed countries. The net result of the non-statistical analysis is a rejection of the hypothesis.

TABLE X

SUMMARY OF THE MEAN OR ADJUSTED MEAN VALUES OF THE RATIOS BY GEOGRAPHIC REGION FOR EXAMINING HYPOTHESIS III

Type of Investment	Mean or Adjusted Mean Value of the Ratios			
	Western Europe	Canada	Latin American Republics	All Other Countries
Total Investment	1.00	.84	3.03	2.97
Direct Investment	1.47	.84	3.41	4.79
Portfolio Investment	.70	1.26	.61	.40

Results of the Statistical Analysis

The results of the least squares multiple regression analysis for the World, Western Europe, Canada, the Latin American Republics, and All Other Countries are presented in Appendix Tables XI through XV. A summary of the coefficients of multiple determination of the five data classifications is shown in Table XI. The various coefficients computed from the multiple regression analysis are shown in Tables XII through XVI. All of the measures presented in the above tables were described in detail in Chapter IV as well as their application in examining the hypothesis.

Examination of Hypothesis I. The first hypothesis was examined by using the coefficients of multiple determination (R^2). If the value of R^2 was significant at the .05 level for each dependent variable, the hypothesis was rejected for those variables since a value of R^2 which was significant would indicate that there was a correlation between the independent variables and the dependent variable which was probably not due to sampling fluctuations.

The R^2's for the World are shown in Table XI and all of the dependent variables, with the exception of X_6 (Transportation) were highly significant. Thus, for the World classification, the hypothesis is rejected for all dependent variables except Transportation for which the hypothesis is accepted. The values for R^2 for Western Europe were highly significant for all dependent variables with the exception of Transportation. This would indicate that the hypothesis is to be rejected for each dependent variable except Transportation for which it is accepted. The values of R^2 for Canada yielded an identical rejection and acceptance pattern to that of the two previous data classifications. The R^2 values for the Latin American Republics were at least significant for all dependent variables and the hypothesis is rejected. The values of R^2 for All Other Countries yielded an identical rejection pattern to that of the Latin American Republics.

In summary, the first hypothesis is rejected for all the dependent variables for each data classification with the exception of Transportation for which the hypothesis was accepted for the World, Western Europe, and Canada data classifications.

Examination of Hypothesis II. In order to examine the second hypothesis it was necessary to use the multiple regression analysis to compute several measures of the relationship between the individual independent variables and each dependent variable for each of the five data classifications. The measures were: (1) the coefficient of net regression, (2) coefficient of partial determination, (3) beta coefficients, and (4) elasticity coefficients, which were described in Chapter IV. The procedure for examining the hypothesis was to see if

TABLE XI

SUMMARY OF THE COEFFICIENTS OF MULTIPLE DETERMINATION BETWEEN THE INDEPENDENT VARIABLES[a] AND THE DEPENDENT VARIABLES,[b] 1950-1962

Data Classification	Dependent Variables[b]				
	X_4	X_5	X_6	X_7	X_8
World	.92**	.90**	.74	.97**	.97**
Western Europe	.88**	.87**	.55	.94**	.97**
Canada	.91**	.86**	.47	.95**	.94**
Latin American Republics	.78**	.75**	.61*	.98**	.97**
All Other Countries	.87**	.85**	.56*	.78**	.96**

** = Highly significant at the .01 level.

* = Significant at the .05 level.

[a]Independent variables are:

X_1 = Direct investment

X_2 = Portfolio investment

X_3 = Time.

[b]Dependent variables are:

X_4 = Total - Merchandise Exports

X_5 = Merchandise

X_6 = Transportation

X_7 = Travel

X_8 = Miscellaneous services, private.

Source: Appendix Tables XI through XV.

these measures were consistently higher for one type of foreign investment in relation to each of the dependent variables. The four measures derived from the multiple regression analysis are presented in Tables XII through XVI.

The coefficients measuring the relationship between the independent variables and the dependent variables for the World are shown in Table XII. An inspection of the table shows that by far the most important independent variable is Time (X_3) which would include all the pertinent independent variables which could not be individually determined. Although the time variable is an important variable, it will not be discussed in the remainder of this section since the second hypothesis is only concerned with the difference between U. S. direct and portfolio investments and their individual relationship to U. S. exports. As far as U. S. foreign investment is concerned, the coefficients indicate that direct foreign investment was definitely more important than portfolio foreign investment for all the dependent variables except for Miscellaneous Services, Private (X_8). Thus, for the World, the second hypothesis is rejected and U. S. direct foreign investment is considered to be more beneficial to the U. S. balance of payments than U. S. portfolio foreign investment during the period of the study.

The coefficients pertaining to the Western Europe classification are shown in Table XIII. Direct foreign investment appears to be the most important of the two types of foreign investment relative to the Total Merchandise Exports (X_4) and Merchandise (X_5) variables. Portfolio foreign investment, on the other hand, appears to be the most important type of foreign investment relative to the remainder of the dependent variables. Thus

TABLE XII

COMPARISON OF COEFFICIENTS RELATING U. S. FOREIGN INVESTMENT AND THE DEPENDENT VARIABLES VIS-A-VIS THE WORLD, 1950-1962

Coefficients and Independent Variables[a]	Dependent Variables[b] X_4	X_5	X_6	X_7	X_8
Net Regression					
X_1	2.628	2.297	.267	.018	.045
X_2	.552	.289	.146	-.003	.121
X_3	628.300	510.678	7.837	46.607	63.176
Partial Determination					
X_1	.520	.466	.426	.250	-.273
X_2	.046	-.068	.114	.191	.171
X_3	.608	.542	.024	.911	.881
Beta					
X_1	.384	.406	.598	.057	.085
X_2	.062	.039	.251	-.008	.175
X_3	.608	.597	.116	.951	.787
Elasticity (percent)					
X_1	.169	.177	.214	.030	.612
X_2	.019	.012	.062	-.003	.087
X_3	.232	.226	.004	.045	.049

[a]Independent variables are:

X_1 = Direct investment
X_2 = Portfolio investment
X_3 = Time.

[b]Dependent variables are:

X_4 = Total - Merchandise Exports
X_5 = Merchandise
X_6 = Transportation
X_7 = Travel
X_8 = Miscellaneous services, private.

Source: Appendix Tables XI through XV.

TABLE XIII

COMPARISON OF COEFFICIENTS RELATING U. S. FOREIGN INVESTMENT AND THE DEPENDENT VARIABLES VIS-A-VIS WESTERN EUROPE, 1950-1962

Coefficients and Independent Variables[a]	Dependent Variables[b] X_4	X_5	X_6	X_7	X_8
Net Regression					
X_1	2.135	2.035	.029	.012	.060
X_2	1.595	1.201	.194	.050	.150
X_3	217.878	167.182	17.370	6.067	27.260
Partial Determination					
X_1	.262	.282	-.150	.625	.213
X_2	.223	.277	.490	.315	.370
X_3	.339	.263	.139	.721	.847
Beta					
X_1	.399	.450	.074	.115	.139
X_2	.125	.112	.209	.209	.147
X_3	.490	.445	.535	.728	.767
Elasticity (percent)					
X_1	.121	.014	.014	.053	.065
X_2	.030	.027	.032	.075	.053
X_3	.260	.243	.018	.578	.062

[a]Independent variables are:

X_1 = Direct investment
X_2 = Portfolio investment
X_3 = Time.

[b]Dependent variables are:

X_4 = Total - Merchandise Exports
X_5 = Merchandise
X_6 = Transportation
X_7 = Travel
X_8 = Miscellaneous services, private.

SOURCE: Appendix Tables XI through XV.

the examination of the hypothesis pertaining to Western Europe is inconclusive since no clear-cut pattern emerged in favor of one or the other types of foreign investment.

The table showing the coefficients pertaining to Canada is Table XIV. It appears that for the most part, there was an inverse relationship between U. S. portfolio foreign investment and all the dependent variables except Miscellaneous Services, Private (X_8). It is possible that this inverse relationship could be the result of a lead-lag relationship but a subsequent graphical analysis did not reveal a definite lead-lag pattern. Where portfolio foreign investment had a positive relationship with X_8, it was also the most important variable relative to X_8. However, since this was the only variable for which portfolio foreign investment was the most important plus the negative relationship between portfolio foreign investment and other dependent variables, direct foreign investment is judged to be the most important type of foreign investment relative to the Canadian export variables. Thus, the examination of the hypothesis pertaining to Canada is rejected and direct foreign investment is considered to be more beneficial to the U. S. balance of payments than portfolio foreign investment.

The coefficients measuring the relationships between the independent variables and the dependent variables for the Latin American Republics are shown in Table XV. It appears that a similar negative relationship existed for portfolio foreign investment and the dependent variables for the Latin American Republics as existed for Canada except that all the dependent variables had an inverse relationship with portfolio foreign

TABLE XIV

COMPARISON OF COEFFICIENTS RELATING U. S. FOREIGN INVESTMENT AND THE DEPENDENT VARIABLES VIS-A-VIS CANADA, 1950-1962

Coefficients and Independent Variables[a]	Dependent Variables[b] X_4	X_5	X_6	X_7	X_8
Net Regression					
X_1	2.477	2.283	.030	.174	-.011
X_2	-.145	-.127	-.022	-.031	.034
X_3	151.597	120.770	2.698	20.963	7.166
Partial Determination					
X_1	.641	.662	.986	.569	.726
X_2	-.062	.351	.104	.138	.917
X_3	.856	.820	.218	.937	.918
Beta					
X_1	.426	.468	.240	.249	.043
X_2	-.037	-.038	-.263	-.064	.203
X_3	.806	.765	.669	.928	.885
Elasticity (percent)					
X_1	.255	.276	.121	.193	-.039
X_2	-.008	-.008	-.049	-.019	.066
X_3	.269	.251	.188	.400	.435

[a]Independent variables are:

X_1 = Direct investment
X_2 = Portfolio investment
X_3 = Time.

[b]Dependent variables are:

X_4 = Total Merchandise Exports
X_5 = Merchandise
X_6 = Transportation
X_7 = Travel
X_8 = Miscellaneous services, private.

Source: Appendix Tables XI through XV.

TABLE XV

COMPARISON OF COEFFICIENTS RELATING U. S. FOREIGN INVESTMENT AND THE DEPENDENT VARIABLES VIS-A-VIS THE LATIN AMERICAN REPUBLICS, 1950-1962

Coefficients and Independent Variables[a]	Dependent Variables[b] X_4	X_5	X_6	X_7	X_8
Net Regression					
X_1	1.374	1.263	.084	-.066	.033
X_2	-.693	-.507	-.074	-.043	-.097
X_3	72.559	44.816	-.979	14.810	13.912
Partial Determination					
X_1	.735	.725	.595	-.355	.530
X_2	.017	.288	.125	.856	.738
X_3	.343	.175	.098	.963	.949
Beta					
X_1	.778	.819	.761	-.037	.209
X_2	-.122	-.102	-.132	-.076	-.190
X_3	.508	.359	-.110	1.045	1.093
Elasticity (percent)					
X_1	.084	.093	.078	-.007	.040
X_2	-.014	-.012	-.002	-.016	-.039
X_3	.119	.089	-.003	.045	.455

[a] Independent variables are:

X_1 = Direct investment
X_2 = Portfolio investment
X_3 = Time.

[b] Dependent variables are:

X_4 = Total - Merchandise Exports
X_5 = Merchandise
X_6 = Transportation
X_7 = Travel
X_8 = Miscellaneous services, private.

Source: Appendix Tables XI through XV.

investment. A graphic analysis also failed to reveal any definite lead-lag relationship which could have produced such results. Portfolio foreign investment ranks first in importance relative to the dependent variable Travel (X_7) and Miscellaneous Services, Private (X_8) although it was a negative relationship as pointed out above. It is interesting to note that direct foreign investment relative to X_7 was also a negative relationship. Direct foreign investment, on the other hand, ranked first for the remaining variables and on this basis the hypothesis for the Latin American Republics is rejected.

The coefficients pertaining to the All Other Countries classification are shown in Table XVI. The coefficients in this table are the most inconclusive of the entire analysis. Portfolio foreign investment had an inverse relationship with all the dependent variables except Travel (X_7) and there was no clear-cut pattern of coefficients favoring one or the other types of foreign investment. Thus, the examination of the hypothesis for All Other Countries is inconclusive.

In summary, the hypothesis was rejected for three of the five data classifications, and since one of the classifications for which the hypothesis was rejected was for the World, the hypothesis is judged to be rejected. Thus, there appears to be a difference between the benefits to the U. S. balance of payments received from U. S. direct foreign investment and U. S. portfolio foreign investment for the period of the study and direct foreign investment appears to be the most beneficial of the two types of foreign investment.

Examination of Hypothesis III. It was pointed out in Chapter IV that the multiple regression analysis is not applicable to testing the

TABLE XVI

COMPARISON OF COEFFICIENTS RELATING U. S. FOREIGN INVESTMENT AND THE DEPENDENT VARIABLES VIS-A-VIS ALL OTHER COUNTRIES, 1950-1962

Coefficients and Independent Variables[a]	Dependent Variables[b] X_4	X_5	X_6	X_7	X_8
Net Regression					
X_1	3.054	3.033	-.061	.051	.031
X_2	-2.074	-1.578	-.526	.102	-.073
X_3	309.503	255.006	29.117	3.099	22.280
Partial Determination					
X_1	.206	.194	-.012	.049	-.167
X_2	.024	.046	.213	.728	-.221
X_3	.567	.508	.453	.751	.843
Beta					
X_1	.222	.253	-.068	.159	.035
X_2	-.186	-.162	-.724	.395	-.102
X_3	.930	.877	1.341	.401	1.047
Elasticity (percent)					
X_1	.118	.136	-.029	.166	.029
X_2	-.056	-.049	-.174	.229	.047
X_3	.468	.045	.541	.040	.801

[a]Independent variables are:

X_1 = Direct investment
X_2 = Portfolio investment
X_3 = Time.

[b]Dependent variables are:

X_4 = Total - Merchandise Exports
X_5 = Merchandise
X_6 = Transportation
X_7 = Travel
X_8 = Miscellaneous services, private.

Source: Appendix Tables XI through XV.

third hypothesis since the coefficients are not suitable for inter-classification comparisons.

Tests for Autocorrelation and Intercorrelation

In Chapter IV it was pointed out that in computing a multiple regression analysis of time series there are two problems which may tend to reduce the degree of statistical significance of the results of the analysis. These two problems are: (1) serial or auto-correlation, and (2) intercorrelation. The results of the tests for the presence of these two phenomena in the multiple regression analysis connected with this thesis are discussed below.

Test for autocorrelation. In order to test for the presence of autocorrelation it was necessary to compute the value for K_c and the dependent variable Total-Merchandise Exports (X_4) for each of the five data classifications. Only the variable X_4 was used in the test since the values for this variable are the summation of the other dependent variables. The value for K_c was computed by using the formula:

$$K_c = \frac{\frac{(Z_{t+1} - Z_t)^2}{n-1}}{\frac{Z^2_t}{n}}$$

where: Z_t = the residual from the estimating equation for each year t, Z_{t+1} = the residual from the estimating equation for the year following Z_t, and n = sample size.

The results of the test for autocorrelation are shown in Table XVII. The values for K_c for each data classification were greater than K and less than K' for all of the five data classifications at the .01 and .05

TABLE XVII

RESULTS OF TEST FOR AUTOCORRELATION BETWEEN INDEPENDENT VARIABLES AND X_4 DEPENDENT VARIABLE AT THE .01 AND .05 SIGNIFICANCE LEVELS*

Geographic Region	.01 Significance			.05 Significance		
	K	K_c	K'	K	K_c	K'
World	.934	2.101	3.400	1.252	2.101	3.081
Western Europe	.934	1.619	3.400	1.252	1.619	3.081
Canada	.934	2.687	3.400	1.252	2.687	3.081
Latin American Republics	.934	2.541	3.400	1.252	2.541	3.081
All Other Countries	.934	2.056	3.400	1.252	2.056	3.081

*The values of K and K' for the levels of significance are for a sample size of n = 13.

Note: If $K < K_c < K'$ no autocorrelation is indicated.

Source: The source of K and K' data above are taken from Mordecai Ezekiel and Karl A. Fox, Methods of Correlation and Regression Analysis (New York, 1959), p. 341.

significance levels which indicate that it is highly probable that autocorrelation was not present in the analysis.

Test for intercorrelation. Although there is no statistical test for the presence of intercorrelation, it was pointed out in Chapter IV that when the level of intercorrelation rises above 0.7, the instability of the beta coefficients and the standard errors are too high to yield reliable results. The simple correlation coefficients between each of the three independent variables for each of the five data classifications are shown in Table XVIII.

Out of the fifteen correlation coefficients only four were greater than 0.7, and one of these was only 0.727. Of the four correlation coefficients greater than 0.7, one was between Portfolio Foreign Investment (X_2) and Time (X_3) for the World, the second was between Direct Foreign Investment (X_1) and X_3 for Western Europe, the third was between X_2 and X_3 for All Other Countries. Thus, there was some degree of intercorrelation present which would tend to reduce to a degree the statistical significance of the multiple regression analysis. However, since only four out of fifteen correlation coefficients were greater than 0.7, the reliability of the analysis should not be unduly impaired.

Summary. In summary, it appears that the influence of autocorrelation was absent from the analysis while some degree of intercorrelation was present, although it does not appear to be sufficient to impair the reliability of the analysis.

Summary

The purpose of this chapter was to present the results of the analysis of the time series related to the balance of payments variables

TABLE XVIII

SIMPLE COEFFICIENTS OF CORRELATION BETWEEN THE INDEPENDENT VARIABLES FOR EACH GEOGRAPHIC REGION, 1950-1962

Geographic Region	Independent Variables*		
	X_1	X_2	X_3
World			
X_1	1.000	.550	.668
X_2		1.000	.749
X_3			1.000
Western Europe			
X_1	1.000	.619	.853
X_2		1.000	.581
X_3			1.000
Canada			
X_1	1.000	.221	.151
X_2		1.000	.366
X_3			1.000
Latin American Republics			
X_1	1.000	.091	.016
X_2		1.000	.727
X_3			1.000
All Other Countries			
X_1	1.000	.605	.660
X_2		1.000	.879
X_3			1.000

*X_1 = Direct Foreign Investment
X_2 = Portfolio Foreign Investment
X_3 = Time.

and the application of these results in examining the thesis hypotheses. A summary of the tests of the hypotheses is shown in Table XIX. In general, all three of the hypotheses were rejected as the hypotheses applied to the World classification. The examination of the hypotheses indicated that: (1) foreign investment had a beneficial effect on the U. S. balance of payments, (2) direct foreign investment was more beneficial to the balance of payments than portfolio foreign investment, and (3) the level of economic development of the host country did have an effect on the benefit of foreign investment to the U. S. balance of payments. In the latter instance, it appears that for total and direct foreign investment the benefit to the U. S. balance of payments was higher for investments in relatively underdeveloped countries than for relatively developed countries. The reverse appears to be true for portfolio foreign investment (see Table X). Although direct foreign investment was considered to be beneficial to the U. S. balance of payments, this was not true in every case. Direct foreign investment in Western Europe and Canada appeared to be detrimental to the balance of payments during the period covered by the study.

In the following chapter the results of the analysis will be summarized and the conclusions drawn from the analysis will be given.

TABLE XIX

SUMMARY OF THE ACCEPTANCE OR REJECTION OF THE HYPOTHESES

Tests, Hypotheses and Type of Investment	Geographic Region				
	World	Western Europe	Canada	Latin American Republics	All Other Countries
Test-Non-Statistical					
Hypothesis I					
Total Investment	-	+	+	-	-
Direct Investment	-	+	+	-	-
Portfolio Investment	+	+	+	+	+
Hypothesis II					
Total Investment	NA	NA	NA	NA	NA
Direct Investment	NA	NA	NA	NA	NA
Portfolio Investment	NA	NA	NA	NA	NA
Hypothesis III					
Total Investment	-	NA	NA	NA	NA
Direct Investment	-	NA	NA	NA	NA
Portfolio Investment	-	NA	NA	NA	NA
Test-Statistical					
Hypothesis I					
Total Investment	-	-	-	-	-
Direct Investment	NA	NA	NA	NA	NA
Portfolio Investment	NA	NA	NA	NA	NA
Hypothesis II					
Total Investment	-	0	-	-	0
Direct Investment	NA	NA	NA	NA	NA
Portfolio Investment	NA	NA	NA	NA	NA
Hypothesis III					
Total Investment	NA	NA	NA	NA	NA
Direct Investment	NA	NA	NA	NA	NA
Portfolio Investment	NA	NA	NA	NA	NA

Note: - = Hypothesis rejected
+ = Hypothesis accepted
0 = Test inconclusive
NA = Analysis not applicable.

CHAPTER VI

SUMMARY AND CONCLUSIONS

Summary

In testimony before the House Committee on Banking and Currency, Secretary of the Treasury C. Douglas Dillon stated that the reasons for the U. S. balance of payments deficit were: (1) large military expenditures overseas, (2) large foreign aid grants to other countries, and (3) increasing U. S. private investment in foreign countries.[1] This thesis was concerned with the latter of the three reasons and has attempted to determine if long-term U. S. private foreign investment was detrimental to the long-term private U. S. balance of payments during the period from 1950 through 1962.

A review of the economic theory of capital movements or foreign investments, resulted in the development of three hypotheses: (1) "U. S. foreign investment was not beneficial to the U. S. balance of payments for the period from 1950 through 1962," (2) "There was no difference between the benefits to the U. S. balance of payments received from U. S. direct foreign investment and U. S. portfolio foreign investment for the period from 1950 through 1962," and (3) "There was no difference between the benefits to the U. S. balance

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[1] U. S. House of Representatives, Hearings Before the Committee on Banking and Currency, 88th Congress, First Session (Washington, 1963), p. 101.

of payments received from foreign investment placed in relatively developed countries and relatively underdeveloped countries for the period from 1950 through 1962."

The statistical and non-statistical analysis applied to the first hypothesis above led to a general rejection of the hypothesis and foreign investment was considered to be beneficial to the U. S. balance of payments. There are certain areas of the world, however, where the foreign investment income inflow was less than the foreign investment outflow, viz., Western Europe and Canada, but there was also a concomitantly close relationship between foreign investment and U. S. exports to these countries. Economic theory indicates that this relationship should develop, thus, it is possible that U. S. exports would be lower if foreign investment was curtailed in these two areas and the balance of payments no better off as a result.

The statistical analyses applied to the second hypothesis above led to a general rejection of the hypothesis and direct foreign investment was considered to have been the most beneficial type of foreign investment to the U. S. balance of payments. It was difficult to discover any definite difference in the relationship of direct and portfolio foreign investments with U. S. exports for Western Europe and All Other Countries. There was, however, a distinct pattern of coefficients indicating that direct foreign investment was more beneficial to the U. S. balance of payments for all but the Western Europe and All Other Countries categories.

The non-statistical analyses applied to the third hypothesis above led to a general rejection of the hypothesis and there appeared to be a difference in the benefit to the U. S. balance of payments resulting from foreign investment in developed or underdeveloped countries. The return flow of foreign investment income was much higher than foreign investment outflow for the two categories representing the relatively underdeveloped countries of the world, viz., the Latin American Republics and All Other Countries categories. This pattern of return flows of income from foreign investment over investment outflow appeared to be due to the larger income inflows from these two areas resulting from direct foreign investments as compared to portfolio foreign investment. The income inflow from portfolio foreign investment was less than portfolio foreign investment outflow for the two underdeveloped categories while the return flow from portfolio foreign investment was higher relative to the outflow of portfolio investment to Western Europe and Canada. Thus, it appeared that direct foreign investment in underdeveloped countries was more beneficial to the U. S. balance of payments than portfolio foreign investment while portfolio foreign investment in developed countries was more beneficial to the U. S. balance of payments than direct foreign investment.

Conclusions

The conclusions drawn from the analysis are as follows:

1. Long-term U. S. private foreign investment did not appear to be detrimental to the long-term private U. S. balance of payments from 1950 through 1962. In fact, U. S. foreign investment appeared to have

a beneficial effect on the U. S. balance of payments by yielding income inflows greater than investment outflows and by stimulating exports.

2. Direct foreign investment appeared to be more beneficial to the U. S. balance of payments than portfolio investments which in general were detrimental to the U. S. balance of payments during the period of the study.

3. Foreign investments in underdeveloped countries appeared to be more beneficial to the U. S. balance of payments than those made in developed countries. Direct foreign investments were more beneficial to the U. S. balance of payments than portfolio foreign investments when made in underdeveloped countries while portfolio foreign investments made in developed countries were less detrimental to the U. S. balance of payments than when they were made in underdeveloped countries.

In conclusion, it appears that the federal government should not take broad steps to force a general reduction in direct long-term private foreign investment since this would be detrimental to the U. S. balance of payments by restricting exports and future income inflows. Action could be taken to reduce the level of portfolio long-term private foreign investment which would, in general, help to decrease the U. S. balance of payments deficit, assuming no retaliatory steps are taken by foreign countries which would offset this action.

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A P P E N D I X

APPENDIX TABLE I

U. S. BALANCE OF PAYMENTS WITH THE WORLD FOR THE PRIVATE ACCOUNTS, 1950-1962
(Billions of Dollars)

Year	Net Exports of Goods and Services[a]	Net Private Long-Term Capital Movements: Net Private Long-Term Foreign Investment[b]	Net Private Long-Term Capital Movements: Net Income from Private Long-Term Private Investment[b]	Net Private Long-Term Capital Movements: Total[c]	Net Balance-Exports and Capital[c]
1950	1.2	-1.0	1.1	0.1	1.3
1951	3.6	-0.7	1.3	0.6	4.2
1952	2.9	-0.9	1.3	0.4	3.3
1953	1.4	-0.3	1.3	1.0	2.4
1954	2.5	-0.7	1.6	0.9	3.4
1955	2.8	-0.7	1.8	1.1	4.0
1956	4.8	-2.0	2.1	0.1	4.9
1957	6.5	-2.9	2.2	-0.7	5.8
1958	3.3	-2.6	2.0	-0.5	2.8
1959	1.1	-1.6	2.1	0.6	1.6
1960	4.4	-2.1	2.3	0.2	4.6
1961	5.1	-2.0	2.7	0.7	5.8
1962	4.1	-2.5	3.2	0.7	4.8

[a]Includes the following private import and export accounts, exclusive of government and military: (1) Merchandise, adj., (2) Transportation, (3) Travel, and (4) Miscellaneous Services, Private.

[b]Direct private and portfolio private investment.

[c]Totals may not add due to rounding.

Source: Data for 1950-61 from Balance of Payments, statistical supplement to Survey of Current Business (1963). Data for 1962 from Survey of Current Business, Vol. 44 (March, 1964.

APPENDIX TABLE II

U. S. BALANCE OF PAYMENTS WITH WESTERN EUROPE[a] FOR THE PRIVATE ACCOUNTS, 1950-1962
(Millions of Dollars)

Year	Net Exports of Goods and Services[b]	Net Private Long-Term Capital Movements: Net Private Long-Term Foreign Investment[c]	Net Private Long-Term Capital Movements: Net Income from Private Long-Term Private Investment[c]	Net Private Long-Term Capital Movements: Total	Net Balance-Exports and Capital
1950	1,594	-250	-96	-346	1,248
1951	2,180	54	-113	-59	2,121
1952	1,375	-24	-81	-105	1,270
1953	479	273	-57	216	695
1954	1,205	224	-8	216	1,421
1955	1,670	144	50	194	1,864
1956	2,209	-193	104	-89	2,120
1957	2,762	-21	69	48	2,810
1958	994	-340	79	-261	733
1959	-228	-72	196	124	-104
1960	1,864	-751	120	-631	1,233
1961	2,264	-710	272	-438	1,830
1962	2,108	-908	303	-605	1,503

[a] Includes the members of the Organization for European Economic Cooperation plus Finland, Spain, and Yugoslavia which were added in 1952.

[b] Includes the following private import and export accounts, exclusive of government and military: (1) Merchandise, adj., (2) Transportation, (3) Travel, and (4) Miscellaneous Services, Private.

[c] Direct private and portfolio private investment.

Source: Data for 1950-61 from Balance of Payments, statistical supplement to Survey of Current Business (1963). Data for 1962 from Survey of Current Business, Vol. 44 (March, 1964).

APPENDIX TABLE III

U. S. BALANCE OF PAYMENTS WITH CANADA FOR THE PRIVATE ACCOUNTS, 1950-1962
(Millions of Dollars)

Year	Net Exports of Goods and Services[a]	Net Private Long-Term Capital Movements: Net Private Long-Term Foreign Investment[b]	Net Private Long-Term Capital Movements: Net Income from Private Long-Term Private Investment[b]	Net Private Long-Term Capital Movements: Total	Net Balance-Exports and Capital
1950	37	-607	336	-271	-234
1951	449	-447	281	-166	283
1952	765	-379	259	-120	645
1953	784	-342	221	-121	663
1954	612	-454	273	-181	431
1955	763	-260	314	54	817
1956	1,364	-875	348	-527	837
1957	1,257	-1,025	381	-644	613
1958	1,017	-923	345	-578	439
1959	958	-815	416	-399	559
1960	1,064	-631	417	-214	850
1961	778	-494	494	0	778
1962	513	-529	578	49	562

[a]Includes the following private import and export accounts, exclusive of government and military: (1) Merchandise, adj., (2) Transportation, (3) Travel, and (4) Miscellaneous Services, Private.

[b]Direct private and portfolio private investment.

Source: Data for 1950-61 from Balance of Payments, statistical supplement to Survey of Current Business (1963). Data for 1962 from Survey of Current Business, Vol. 44 (March, 1964).

APPENDIX TABLE IV

U. S. BALANCE OF PAYMENTS WITH THE LATIN AMERICAN REPUBLICS[a]
FOR THE PRIVATE ACCOUNTS, 1950-1962
(Millions of Dollars)

Year	Net Exports of Goods and Services[b]	Net Private Long-Term Capital Movements: Net Private Long-Term Foreign Investment[c]	Net Private Long-Term Capital Movements: Net Income from Private Long-Term Private Investment[c]	Net Private Long-Term Capital Movements: Total	Net Balance-Exports and Capital
1950	-225	-20	530	510	285
1951	417	-139	658	519	936
1952	99	-250	608	358	457
1953	-392	-94	576	482	90
1954	-2	-140	600	460	458
1955	-116	-353	696	343	227
1956	147	-638	828	190	337
1957	818	-1,306	923	-383	435
1958	461	-342	679	337	798
1959	-82	-320	643	323	241
1960	-7	-330	699	369	362
1961	203	-227	784	557	760
1962	-78	-131	866	735	657

[a]Includes the twenty republics of Latin America plus the Organization of American States (Pan American Union), Pan American Health Organization, and Inter-American Development Bank.

[b]Includes the following private import and export accounts, exclusive of government and military: (1) Merchandise, adj., (2) Transportation, (3) Travel, and (4) Miscellaneous Services, Private.

[c]Direct private and portfolio private investment.

Source: Data for 1950-61 from Balance of Payments, statistical supplement to Survey of Current Business (1963). Data for 1962 Survey of Current Business, Vol. 44 (March, 1964).

APPENDIX TABLE V

U. S. BALANCE OF PAYMENTS WITH ALL OTHER COUNTRIES[a] FOR THE PRIVATE ACCOUNTS, 1950-1962

Year	Net Exports of Goods and Services[b]	Net Private Long-Term Capital Movements: Net Private Long-Term Foreign Investment[c]	Net Private Long-Term Capital Movements: Net Income from Private Long-Term Private Investment[c]	Total	Net Balance-Exports and Capital
1950	-130	-175	367	192	62
1951	503	-84	484	400	903
1952	823	-160	470	310	1,133
1953	673	-150	530	380	1,053
1954	811	-191	715	524	1,335
1955	640	-169	700	531	1,171
1956	1,244	-239	745	506	1,750
1957	1,796	-238	771	533	2,329
1958	950	-408	872	464	1,414
1959	354	-275	843	568	922
1960	1,633	-288	989	701	2,334
1961	2,079	-629	1,091	462	2,541
1962	1,770	-651	1,316	665	2,435

[a]Includes Total World less Western Europe, Canada, Latin American Republics, Other Europe, and International Institutions.

[b]Includes the following private import and export accounts, exclusive of government and military: (1) Merchandise, adj., (2) Transportation, (3) Travel, and (4) Miscellaneous Services, Private.

[c]Private direct and portfolio investment.

Source: Data for 1950-61 from Balance of Payments, statistical supplement to Survey of Current Business (1963). Data for 1962 from Survey of Current Business, Vol. 44 (March, 1964).

APPENDIX TABLE VI

RATIOS OF LONG-TERM PRIVATE DIRECT AND PORTFOLIO INVESTMENT INCOME INFLOWS TO INVESTMENT OUTFLOW FOR THE U. S. VIS-A-VIS THE WORLD, 1950-1962

Year	Ratio[a]		
	Direct Investment[b]	Portfolio Investment[b]	Total Investment[b]
1950	2.08	.38	1.33
1951	2.93	.44	1.78
1952	1.66	.96	1.52
1953	1.96	n.c.	3.01
1954	2.59	.72	1.98
1955	2.32	1.07	2.04
1956	1.11	.49	.97
1957	.92	.42	.79
1958	1.80	.29	.97
1959	1.62	.50	1.17
1960	1.39	.61	1.13
1961	1.81	.63	1.33
1962	1.96	.66	1.39

[a]Investment income flowing into the U. S. divided by the amount of investment flowing out of the U. S. during the calendar year.

[b]Refers to U. S. investment in foreign countries and does not take into consideration foreign investment in the U. S.

Note: n.c. = Not computable, i.e., negative figure in ratio numerator or denominator.

Source: Ratios computed from data compiled from Balance of Payments, statistical supplement to Survey of Current Business (1963) for the years 1950-61 and from Survey of Current Business, Vol. 44 (March, 1964) for 1962.

APPENDIX TABLE VII

RATIOS OF LONG-TERM PRIVATE DIRECT AND PORTFOLIO INVESTMENT INCOME INFLOWS TO INVESTMENT OUTFLOWS FOR THE U. S. VIS-A-VIS WESTERN EUROPE,[a] 1950-1962

Year	Ratio[b]		
	Direct Investment[c]	Portfolio Investment[c]	Total Investment[c]
1950	.94	.21	.49
1951	1.86	.95	1.50
1952	n.c.	.44	1.99
1953	3.02	n.c.	n.c.
1954	4.13	n.c.	33.14
1955	1.96	1.19	1.76
1956	.62	.60	.61
1957	.94	1.21	.99
1958	1.53	.53	1.05
1959	.90	.68	.85
1960	.40	.82	.46
1961	.74	.40	.62
1962	.64	.69	.66

[a]Includes the members of the Organization for European Economic Cooperation plus Finland, Spain, and Yugoslavia which were added in 1952.

[b]Investment income flowing into the U. S. divided by the amount of investment flowing out of the U. S. during the calendar year.

[c]Refers to U. S. investment in foreign countries and does not take into consideration foreign investment in the U. S.

Note: n.c. = Not computable, i.e., negative figure in ratio numerator or denominator.

Source: Ratios computed from data compiled from Balance of Payments, statistical supplement to Survey of Current Business (1963) for the years 1950-61 and from Survey of Current Business, Vol. 44 (March, 1964) for 1962.

APPENDIX TABLE VIII

RATIOS OF LONG-TERM PRIVATE DIRECT AND PORTFOLIO INVESTMENT INCOME INFLOWS TO INVESTMENT OUTFLOWS FOR THE U. S. VIS-A-VIS CANADA, 1950-1962

Year	Ratio[a]		
	Direct Investment[b]	Portfolio Investment[b]	Total Investment[b]
1950	1.02	.36	.67
1951	1.00	.52	.76
1952	.52	4.34	.76
1953	.51	64.00	.83
1954	.58	3.80	.84
1955	.83	n.c.	1.52
1956	.54	.36	.47
1957	.49	.47	.49
1958	.75	.38	.55
1959	.83	.50	.66
1960	.77	1.30	.91
1961	1.50	.99	1.26
1962	1.53	.88	1.20

[a]Investment income flowing into the U. S. divided by the amount of investment flowing out of the U. S. during the calendar year.

[b]Refers to U. S. investment in foreign countries and does not take into consideration foreign investment in the U. S.

Note: n.c. = Not computable, i.e., a negative figure in ratio numerator or denominator.

Source: Ratios computed from data compiled from Balance of Payments, statistical supplement to Survey of Current Business (1963) for the years 1950-61 and from Survey of Current Business, Vol. 44 (March, 1964) for 1962.

APPENDIX TABLE IX

RATIOS OF LONG-TERM PRIVATE DIRECT AND PORTFOLIO INVESTMENT INCOME INFLOWS TO INVESTMENT OUTFLOWS FOR THE U. S. VIS-A-VIS LATIN AMERICAN REPUBLICS,[a] 1950-1962

Year	Ratio[b]		
	Direct Investment[c]	Portfolio Investment[c]	Total Investment[c]
1950	13.07	n.c.	41.54
1951	3.58	n.c.	4.40
1952	1.98	n.c.	2.31
1953	4.16	n.c.	5.39
1954	8.43	.22	3.54
1955	4.06	.16	1.89
1956	1.29	.81	1.26
1957	.76	.37	.71
1958	2.14	1.31	2.02
1959	2.75	.49	1.85
1960	6.75	.35	2.09
1961	5.04	.88	3.14
1962	n.c.	.91	7.73

[a]Includes the twenty republics of Latin American plus the Organization of American States (Pan American Union), Pan American Health Organization, and Inter-American Development Bank.

[b]Investment income flowing into the U. S. divided by the amount of investment flowing out of the U. S. during the calendar year.

[c]Refers to U. S. investment in foreign countries and does not take into consideration foreign investment in the U. S.

Note: n.c. = Not computable, i.e., a negative figure in ratio numerator or denominator.

Source: Ratios computed from data compiled from Balance of Payments, statistical supplement to Survey of Current Business (1963) for the years 1950-61 and from Survey of Current Business, Vol. 44 (March, 1964) for 1962.

APPENDIX TABLE X

RATIOS OF LONG-TERM PRIVATE DIRECT AND PORTFOLIO INVESTMENT INCOME INFLOWS TO INVESTMENT OUTFLOWS FOR THE U. S. VIS-À-VIS ALL OTHER COUNTRIES,[a] 1950-1962

Year	Ratio[b]		
	Direct Investment[c]	Portfolio Investment[c]	Total Investment[c]
1950	2.10	n.c.	2.15
1951	9.90	.19	5.15
1952	3.09	.80	2.95
1953	3.50	16.00	3.58
1954	9.13	.11	3.59
1955	5.53	.41	3.84
1956	3.58	.52	2.92
1957	3.65	.76	3.09
1958	4.37	.17	2.02
1959	6.95	.22	2.59
1960	6.23	.36	3.06
1961	2.64	.33	1.65
1962	3.60	.48	2.06

[a]Includes Total World less Western Europe, Canada, Latin American Republics, Other Europe, and International Institutions.

[b]Investment income flowing into the U. S. divided by the amount of investment flowing out of the U. S. during the calendar year.

[c]Refers to U. S. investment in foreign countries and does not take into consideration foreign investment in the U. S.

Note: n.c. = Not computable, i.e., a negative figure in ratio numerator or denominator.

Source: Ratios computed from data compiled from Balance of Payments, statistical supplement to Survey of Current Business (1963) for the years 1950-61 and from Survey of Current Business, Vol. 44 (March, 1964) for 1962.

APPENDIX TABLE XI

MULTIPLE REGRESSION ANALYSIS FOR U. S. FOREIGN INVESTMENT AND U. S. PRIVATE EXPORTS VIS-A-VIS THE WORLD, 1950-1962
(Millions of Dollars)

Dependent Variable	X_1	X_2	X_3	Constant	S	R^2 (Ratio)
X_4	2.628* (.89)	.552 (1.30)	628.300** (169.50)	11,033	1,342	.917**
X_5	2.297* (.80)	.289 (1.17)	510.678** (153.28)	9,286	1,214	.900**
X_6	.267* (.10)	.146 (.15)	7.837 (19.74)	1,052	156	.735
X_7	.018 (.03)	-.003 (.04)	46.607** (4.99)	372	40	.968**
X_8	.045 (.04)	.121 (.06)	63.176** (7.96)	323	63	.970**

Note: Standard errors of the net regression coefficients are in parenthesis.

*Significant at the .05 level.
**Highly significant at the .01 level.

Symbols:

X_1 = Direct Investment
X_2 = Portfolio Investment
X_3 = Time
X_4 = Total-Merchandise Exports
X_5 = Merchandise
X_6 = Transportation
X_7 = Travel
X_8 = Miscellaneous Services, Private.

S = Standard error of multiple regression.

R^2 = Coefficient of multiple determination.

APPENDIX TABLE XII

MULTIPLE REGRESSION ANALYSIS FOR U. S. FOREIGN INVESTMENT AND U. S. PRIVATE EXPORTS VIS-A-VIS WESTERN EUROPE, 1950-1962
(Millions of Dollars)

Dependent Variable	X_1	X_2	X_3	Constant	S	R^2 (Ratio)
X_4	2.135 (1.23)	1.595 (1.87)	217.878 (98.58)	3,456	689	.881**
X_5	2.035 (1.07)	1.201 (1.64)	167.182 (86.05)	2,839	601	.873**
X_6	.029 (.17)	.194 (.27)	17.370 (13.99)	515	97	.552
X_7	.012 (.02)	.050 (.08)	6.067** (1.37)	22	10	.935**
X_8	.060 (.05)	1.50 (.08)	27.260** (4.07)	81	28	.968**

Note: Standard errors of the net regression coefficients are in parenthesis.

*Significant at the .05 level.
**Highly significant at the .01 level.

Symbols:

X_1 = Direct Investment
X_2 = Portfolio Investment
X_3 = Time
X_4 = Total-Merchandise Exports
X_5 = Merchandise
X_6 = Transportation
X_7 = Travel
X_8 = Miscellaneous Services, Private.

S = Standard error of multiple regression.
R^2 = Coefficient of multiple determination.

APPENDIX TABLE XIII

MULTIPLE REGRESSION ANALYSIS FOR U. S. FOREIGN INVESTMENT AND U. S. PRIVATE EXPORTS VIS-A-VIS CANADA, 1950-1962

(Millions of Dollars)

Dependent Variable	X_1	X_2	X_3	Constant	S	R^2 (Ratio)
X_4	2.477** (.61)	-.145 (.44)	151.597** (20.56)	1,915	257	.907**
X_5	2.283** (.57)	-.127 (.41)	120.770** (19.25)	1,623	241	.885**
X_6	.030 (.03)	-.022 (.02)	2.698* (1.06)	74	13	.466
X_7	.174* (.06)	-.031 (.04)	20.963** (1.89)	156	24	.946**
X_8	-.011 (.02)	.034* (.01)	7.166** (.70)	62	9	.943**

Note: Standard errors of the net regression coefficients are in parenthesis.

*Significant at the .05 level.
**Highly significant at the .01 level.

Symbols:

X_1 = Direct Investment
X_2 = Portfolio Investment
X_3 = Time
X_4 = Total-Merchandise Exports
X_5 = Merchandise
X_6 = Transportation
X_7 = Travel
X_8 = Miscellaneous Services, Private.

S = Standard error of multiple regression.

R^2 = Coefficient of multiple determination.

APPENDIX TABLE XIV

MULTIPLE REGRESSION ANALYSIS FOR U. S. FOREIGN INVESTMENT AND U. S. PRIVATE EXPORTS VIS-A-VIS THE LATIN AMERICAN REPUBLICS, 1950-1962
(Millions of Dollars)

Dependent Variable	X_1	X_2	X_3	Constant	S	R^2 (Ratio)
X_4	1.374** (.28)	-.693 (1.30)	72.559* (32.31)	3,457	298	.784**
X_5	1.263** (.26)	-.507 (1.21)	44.816 (30.26)	2,943	280	.752**
X_6	.084** (.02)	-.047 (.11)	-.979 (2.71)	269	25	.609*
X_7	-.006 (.01)	-.043 (.04)	14.810** (.89)	127	8	.983**
X_8	.033** (.01)	-.097* (.04)	13.912** (1.03)	116	9	.973**

Note: Standard errors of the net regression coefficients are in parenthesis.

*Significant at the .05 level.
**Highly significant at the .01 level.

Symbols:

X_1 = Direct Investment
X_2 = Portfolio Investment
X_3 = Time
X_4 = Total-Merchandise Exports
X_5 = Merchandise
X_6 = Transportation
X_7 = Travel
X_8 = Miscellaneous Services, Private.

S = Standard error of multiple regression.

R^2 = Coefficient of multiple determination.

APPENDIX TABLE XV

MULTIPLE REGRESSION ANALYSIS FOR U. S. FOREIGN INVESTMENT AND U. S. PRIVATE EXPORTS VIS-A-VIS ALL OTHER COUNTRIES, 1950-1962
(Millions of Dollars)

Dependent Variable	X_1	X_2	X_3	Constant	S	R^2 (Ratio)
X_4	3.054 (2.23)	-2.074 (2.85)	309.503** (90.23)	2,178	546	.867**
X_5	3.033 (2.06)	-1.578 (2.63)	255.006** (83.41)	1,875	504	.851**
X_6	-.061 (.26)	-.526 (.34)	29.117* (10.72)	249	65	.559*
X_7	.051 (.07)	.102 (.08)	3.099 (2.69)	12	16	.782**
X_8	.031 (.07)	-.073 (.09)	22.280** (2.98)	42	18	.964**

Note: Standard errors of the net regression coefficients are in parenthesis.

*Significant at the .05 level.
**Highly significant at the .01 level.

Symbols:

X_1 = Direct Investment
X_2 = Portfolio Investment
X_3 = Time
X_4 = Total-Merchandise Exports
X_5 = Merchandise
X_6 = Transportation
X_7 = Travel
X_8 = Miscellaneous Services, Private.

S = Standard error of multiple regression.

R^2 = Coefficient of multiple regression.

VITA

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Doctor of Philosophy

Thesis: THE IMPACT OF LONG-RUN PRIVATE FOREIGN INVESTMENT ON THE U. S. BALANCE OF PAYMENTS, 1950-1962

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