

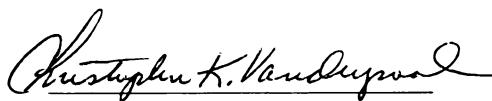


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INTEGRATION WITH INDUSTRIAL ECONOMIES
AND GROWTH IN LATIN AMERICA

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ABSTRACT

INTEGRATION WITH INDUSTRIAL ECONOMIES AND GROWTH IN LATIN AMERICA

By

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The research reported here studies the effects of penetration by foreign capital and integration in world markets on the growth rates of eighteen Latin American republics over the period 1950 to 1970. Penetration by foreign capital is measured by repatriated income on foreign investment and reported new incoming investment. Market integration is measured by the weight of foreign trade in Gross Domestic Product. The independent variable is percentage growth in Gross Domestic Product over various periods. Relationships are measured using rank order correlation techniques. The results indicate that neo-classical international economic theories provided a plausible explanation for the relationships found between growth and integration in the world economy for the period 1950 to 1957, but not for the period 1957 to 1970. Results for the latter period were compatible with various dependence theories but no direct tests were made.

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INTRODUCTION

The traditional approach to the study of international affairs has stressed the relations between a small number of major powers. From the Papal division of the New World in 1493 to the Treaty of Versailles in 1918, patterns of power that eventually included the entire globe expressed the conflicting interests of a handful of European nations, later joined by the United States and Japan. Some areas, including China and Latin America after independence, avoided formal political control but were unable to exercise independent influence on the course of global affairs. The Second World War brought two significant changes. The realization of the strengths of the United States and the Soviet Union, coupled with the prostration of Europe, led to the Cold War. Interests of the great powers were largely defined by the conflict between capitalist West and communist East. Foreign policy of the capitalist powers was designed to keep the rest of the world from following Eastern Europe and then China into the communist sphere. American policy in particular was concentrated on hot spots of potential communist advance—Korea, Indochina, Cuba, etc. Relatively quiet areas were downgraded to such an extent that the incoming Carter administration could assert that the United States had no African policy.

The second major effect of the War was the wave of decolonization. The United Nations provided a forum for representatives of peoples hitherto voiceless on the global stage. Many of the new nations adopted a policy of non-alignment, holding that their interests were best served by disengagement from the East/West struggle. The structure of the United Nations General Assembly and of its various subsidiary organizations gave small states acting in concert the ability to circumvent the large powers on certain issues, changing the basis of discussion from East/West communist/capitalist to North/South industrial/non-industrial. Given the structure of the world economy, in which 74% of the foreign trade with non-

communist non-industrial nations is with advanced capitalist nations and only 7% with communist nations, the new basis of conflict must be seen as essentially within world capitalist relations. The communist powers' relative lack of direct economic penetration in the non-aligned group often allows them to support the South against the capitalist North, enhancing the power of the small states. The new division was perhaps most dramatically reflected in the 1974 General Assembly session which passed, over opposition from the advanced capitalist nations, a (non-binding) resolution calling for a new world economic order, and in the virtual breakdown of the Law of the Sea talks.

The conflicts newly expressed in international forums are associated with two conflicting bodies of theory which attempt to explain international economic relations and the development, or lack thereof, of nations. It is assumed by both that industrial development is a desirable goal. The theoretical differences concern the causes and effects of international trade and investment. The spokesmen of the advanced capitalist nations contend that international trade and investment foster the rapid spread of industrialization and are beneficial to all parties. The non-industrial nations contend that the results are often one-sided, with benefits accruing to the more industrially and financially advanced partners, and that trade and investment may in fact hinder the advance of the less developed. Spokesmen of the latter group have provided the labels "Center" and "Periphery" used extensively in this paper. The earliest use of these terms known to this writer was by Raul Prebische [1950]. Galtung [1971] provides good theoretical clarification. The terms express a relationship of power. "Center implies "decisions made here." "Periphery" implies "decisions made elsewhere." As used here, Center applies to the industrially advanced capitalist nations of Western Europe, the United States, Canada, Australia and Japan. Periphery applies to the non-communist, less industrially advanced nations. Communist nations are omitted from this study due to their relative lack of economic ties with non-communist states.

While the relationship between theory and national policies may be vague, it is assumed here that leaders of developing nations will pay increasing attention to the experience of nations of similar situation. If it is shown that reality contradicts the glowing assurances of

the Center, it can be expected that peripheral nations will increasingly adopt policies based on other perspectives. Exhaustion of key natural resources in the Center may give the Periphery power to go their own way and force concessions from their previous masters. Various organizations, particularly those related to the United Nations, provide a framework for unified action by peripheral nations and a forum for alternate theory. If these nations do adopt a course of unified action, the traditional analysis of international affairs based on the study of the great powers may be due for modification.

Review of Theory

Introduction

The study of issues of development is currently pursued by what are in effect two hostile camps. On one side are conventional economists, with theoretical roots in Adam Smith. Their main concerns can be described, charitably, as the development of a useful body of practical knowledge about the workings of the economy, with the aim of ensuring its smooth functioning. Their main concerns can be uncharitably described, as by Bodenheimer [1969], as providing the ideological window dressing for continued domination of the periphery by the center. The other group combines the tradition of Marx and Lenin with the experience of frustration of development in the periphery. From this group of dependence theorists comes the framework of this study, which involves the economic relations between the center and periphery. It concentrates on international trade and capital movements, and their effects on peripheral development.

The analyses of the two groups, and the conclusions with regard to policies that should be followed by peripheral nations, differ so radically that they are treated here separately.

Conventional Theory

Conventional theory with regard to peripheral development is basically an extension of the principles assumed to operate in the domestic economies of the center. Trade between the center and periphery is considered based on the same processes as trade between nations of the center. Its implications are viewed somewhat differently because the various levels of development determine the types of commodities traded, but its theoretical explanation is the same. Likewise, foreign investment in the periphery is believed based on the same mechanisms as investment in the center. While trade and investment are assumed to be related, conventional economists offer explanations for each that are not closely related. This presentation, therefore, reviews explanations of trade and investment separately.

Trade

The earliest rigorous treatment of international economic relations was the theory of comparative advantage advanced by the early Nineteenth Century British economist Ricardo. The theory was developed at a time when Britain was undergoing rapid industrial growth based on international trade based in turn on growing domination of the seas. Trade at that time was restricted by a wide variety of mercantilist policies including protective tariffs and colonial trade monopolies. The theory provided a basis for arguments against mercantilist policies and in favor of free trade. Comparative advantage became the rationale of the British Free Trade movement of the last century, and in its modern version is the basis of arguments by the center against restrictions on international flows of capital and commodities.

Comparative advantage was based on a labor theory of value and assumed immobility of the factors of production. It attempted to explain commodity trade between nations in terms of differing national resource bases. Different natural endowments of nations cause differing amounts of labor to be expended in the production of the same commodities. When differences are larger than the labor expended in transportation, it is to the advantage of each nation to specialize in production of those commodities for which their natural endowments best suit them, and to trade for commodities representing the best use of other nations' endowments. In this way natural resources are everywhere put to the most efficient use, with minimum labor achieving maximum production.

As the labor theory of value was superseded by the concept of value based on factor rewards, comparative advantage was modified to a theory of comparative costs. The description here is based on Kramer, d'Arlin, and Root [1959]. Commodity prices are determined by the level of reward to the various factors entering into their production—land, labor, capital and management. Price, supply, and demand associated with each factor vary between countries due to the low mobility of factors. Nations should specialize in production of those commodities for which their combination of factor costs is lowest in comparison to the combination of other nations'. It is emphasized that this is a theory of *comparative* costs, under which it may make sense for a country to abandon production of a given

commodity in favor of imports from a nation not as well suited to its production in order to concentrate resources in production of another commodity in which the comparative advantage is even greater.

Mobility of factors tends to lessen their difference in price according to the laws of supply and demand. A factor with perfect mobility would command the same price everywhere. If all factors were perfectly mobile, grounds for commodity trade would disappear. All factors are mobile to varying degrees except for land. One implication of the perfect immobility of land, including the agricultural products that may be grown on it and the mineral resources under it, is the argument that those nations with mineral wealth or fertile soil should specialize in primary production for export to less favored nations. This can be very attractive to nations without an industrial base. Chenery [1960] goes so far as to suggest that mass consumption levels thus far typical only of advanced industrial nations may be achieved without industrialization, by increasing primary extraction to a high enough level to import any industrial products desired. Chenery does not address the question of resource depletion. Less extreme is Rostow's [1962] assertion that increasing primary exports in order to gain foreign exchange for the purchase of capital goods should be a major priority of a new nation embarking on the road to development. He argues that investments in primary extraction industries offer the most immediately available return and can provide the best original base for domestic capital formation.

While conventional theorists have long considered over-specialization to be a thing to avoid, (as is evident in Samuelson's [1961] treatment of a mythical developing country in his introductory economics text), increasing exports in order to finance imports remains a key priority. The First National Development Plan 1972/74 of Brazil, prepared with the advice of the Diebold Institute, a conventional consulting firm, and excerpted in a publication of that organization [1973], is typical of conventional attitudes toward the role of exports in the developing economy. The plan sets as a goal an annual increase of above 10% in export revenues and creation of new categories of export production (manufactured goods, processed mineral ores and non-traditional agricultural products) to compete with coffee. Trade

is considered of great importance to developing nations. World markets offer a ready base for capital formation at rates exceeding those of the period of early development in the center. In addition, technology available from the center is far superior to that on which the early development of the center was based. Relatively large remaining mineral resources coupled with low internal demand and tropical climate for agriculture give peripheral nations a comparative advantage in raw materials export. Trade of primary commodities for technologically advanced capital and intermediate goods should allow growth at rates far higher than those of the historic center.

Capital Penetration

Capital from external sources plays a major developmental role in conventional theory. Developed nations are formally committed to assisting the periphery through such international agencies as the International Bank for Reconstruction and Development (IBRD) and national programs like the now defunct Alliance for Progress. The motive for this commitment is not altruistic. Samuelson explains it as the “desire to have foreign economies grow up which display those differences in comparative advantage [that have been] shown to be the sole basis for fruitful international exchange.” [1961, p. 780]. Development is also seen as the best way to combat the threat of communism by the Committee for Economic Development (CED) [1956], an organization with considerable input into U.S. foreign economic policy decisions. Aside from direct capital transfers in the form of loans and grants, governments of the center attempt to facilitate investment overseas. Various tax incentives are described by Barlow and Wender [1954], while bilateral treaties are used to maintain favorable investment climates overseas [CED 1956, p. 17; Becker, 1959].

Recent literature on multinational corporations (MNCs) outlines a number of reasons for private foreign investment based in the internal dynamic of firms and competitive market conditions. Vertical and horizontal integration across national boundaries provides several advantages. Transfer pricing, the ability to set prices for intrafirm transfers without regard to costs, allows the firm to take profits in whichever jurisdiction offers the lowest tax rate;

or as Moran [1973] suggests, to erect artificially high entry barriers at weak points in an integrated production chain. Stobaugh et. al. [1972] hold that firms expand their marketing operations to foreign areas when the home market is saturated, as the marginal profit of expanding current production is likely to be higher than that of beginning new lines for the home market. Foreign investment is then often made to protect acquired markets from local competitors. Vernon [1966] finds that the life of a given product can be extended by acquiring markets in areas where the state of the art is lower than in the home country. Hymer [1974] notes that this has the effect of reducing per-unit research and development costs by amortizing them over a longer product run. To these motivations the Diebold study adds the search for cheap labor and the avoidance of pollution regulations. All of these arguments are based on the premise that the firm that does not avail itself of these advantages will lose ground to its competitors and stagnate.

The conventional theorist's view of the role of foreign investment in the periphery is typified by Kafka [1967]: "Capital imports in all their forms have been and are a highly positive agent of progress in developing countries." Aside from immediate relief of balance of payments problems, Chenery [1967] holds that external capital flows, whether official aid or private investment, allow capital formation at rates unsustainable by export earnings, accelerating the rate of growth. External capital operates through helping overcome bottlenecks to development as varied as low levels of domestic savings or lack of entrepreneurial attitudes. A similar view is held by Streeten [1971], who holds the benefits of capital from the center to be more qualitative than quantitative. Some of the contributions he sees are helping in the transfer of technology, contributing to vigorous competition by changing market structures, raising domestic wages, and opening previously closed societies to capital and product markets, sales organizations, overseas banks and "other institutions."

Conventional theories of international economic relations do not explain why nations have failed to develop. Trade and capital movements have been well developed for long periods, for centuries in the case of Latin America. Explanation of the failure of peripheral nations to close the industrial gap with the center are left to sociologists and political scientists, who

generally point to the failure of peripheral nations to adopt certain attitudes and institutions present in the center. These failures create various “bottlenecks” which hinder development. An extensive literature has developed on the processes of overcoming these bottlenecks. Among the best are Lerner [1958], Hirschman [1961, 1972], Rostow [1962] and Kuznets [1973], all of whom expect that further contact with the center will eventually aid in overcoming hindrances to development. Kuznets suggests that there is no “failure” of development, but rather the time span required may be so long that criticisms of conventional theory based on continuing gaps between Center and Periphery result from inordinate impatience.

The general framework remains Rostow’s: undeveloped, traditional societies are believed to embark on a continuum of development, in a manner somewhat similar to the historical development of the Center, but accelerated by diffusion of capital, technology, and the wealth of experience of the Center.

Attitudes which peripheral nations should adopt toward foreign trade and capital are neatly summarized in the Diebold study in a set of recommendations for developing countries. A partial list includes: concentrating on infrastructure, especially deep water ports; creating business climates attractive to export oriented manufacturing concerns fleeing anti-business attitudes elsewhere; encouraging local entrepreneurs to subcontract work from multinational industry; avoiding protectionism as a standard policy; and hiring outside (foreign) consultants to keep an eye on the accounting practices of foreign firms.

Dependence Theories

The current dependence theories are a fusion of two lines of analysis. The oldest is based on Marx' framework for the analysis of capitalism.

Marx, while not offering a rigorous theory comparable to Ricardo's, discusses foreign trade and economic penetration on numerous occasions, often in reference to the relationship of Britain with her colonies. Modern foreign trade was seen as the result of the necessity of capitalism to produce on an ever expanding scale [1967, III:333]. Free trade was seen to have certain minor effects on the industrial nations but overwhelming effects on the colonies. For industrial nations, trade with the colonies cheapens the various raw materials used in production and the food consumed by the work force, cheapening the elements of constant and variable capital respectively and hastening capital accumulation [1967, III:237]. The colonies provided a market for excess commodity production, and commodities to be purchased, thus helping avoid crises arising from difficulties in converting capital back and forth from its money and commodity forms [1967, II:468]. In the non-industrial areas, trade destroys traditional modes of production which cannot survive competition with cheap factory goods. In India, this resulted in the destruction of the weaving craft and broke the traditional bond between industry and agriculture, hastening the process of capitalization of agriculture [1967, III:333-4]. This process is essentially one of primitive accumulation aided by the force of imperial military power.

Marx offered several reasons for the export of capital to the colonies. He argued that as industrialization advances, the ratio of constant capital in machinery and raw materials to that of variable capital in wages increases, a trend accelerated by foreign trade, and the rate of profit tends to fall. The lower ratio in the colonies implies higher profits and attracts mobile capital [1967, III:238]. In India, destruction of the traditional economy had reduced local incomes to the extent that markets for British goods were threatened. Marx argued that this would tend to force the British to proceed with the redevelopment of the Indian economy by breaking up the various monopolies of the East India Company and allowing the introduction of new capital [1960, 48-9].

Railroads, while built primarily to haul colonial products to the seaports, were expected to have a far reaching effect on the local economy. Marx expected the railroads to bring about marked advances in agriculture and distribution, and to create their own requirements for a supporting industrial base. Once industrial capital was introduced, it would provide impetus for the complete development of the colony. As in the advanced nations, the welfare of the people could be assured only by the subsequent overthrow of the capitalist mode of production, with the added necessity of destroying the colonial yoke. In the long run, capitalism was seen as a necessary advance, with its non-indigenous origins allowing reduction of its period of development compared to that of European capitalism [1960, 79-82]. In many ways, Marx' expectations were similar to those of conventional theorists.

While Marx saw the financiers of the stock exchange as leading the tide of colonialism, he did not use concepts of monopoly to any extent. His writings on the colonial system assumed a framework of cutthroat competition superseding mercantilist arrangements. Lenin, writing on the eve of the First World War, modified this in his pamphlet *Imperialism: the Highest Stage of Capitalism*. Drawing on Hilferding [1910], who saw control of capital increasingly centralized in the hands of a relatively small number of financial cartels, Lenin saw the world carved into spheres of control by competing monopolies. Falling rates of profit at home led to demand for external outlets for superabundant capital, and control of raw materials was crucial. The existing division of the world could be modified only by wars fought between nations controlled by the cartels. Formal colonial control was seen as only the current method of domination. Less formal control using economic and diplomatic dependence was considered possible. Industrialization of the colonies was a possibility, but monopoly control and the end of competition made it an option rather than an inevitable trend.

Lenin saw the colonies as an outlet for excess capital, with capital export replacing commodity export from the insufficient markets of the home countries. This view was modified by Baran [1962]. Profitability of overseas investments and development of mass consumption markets at home had reversed the flow of capital. Advanced capitalism is seen as faced with increasing amounts of potential surplus which cannot be absorbed. The military and

administrative expenses of imperialism are seen as mechanisms that allow the absorption of capital, while resistance to socialism maintains the world as a field of operation for monopoly capital. The backwardness of the periphery is seen as a result of rapacious plunder by the center of colonies unsuited for direct settlement, continued by misdirection of local capital into unproductive sectors.

Baran maintains the Marxist tradition viewing imperialism in terms of the evolution of capitalism in the center, but extends it to deeper examination of its effects on the periphery. This facilitated fusion of the Marxist tradition with the dependence school which developed after the Second World War.

The large number of former colonies which became independent following the war led to increased interest in the process of development. This led, in part, to the developmental school represented by Rostow and the conventional economists which views development as a basically indigenous phenomenon. Former colonial ties and quite likely the Marshall Plan of international aid for the redevelopment of Europe contributed to the formation of an alternate line which viewed development in the context of existing relationships with advanced capitalist nations.

Prebische [1950] and Singer [1950] analysed trade relations between Latin America and the center. Declines in the terms of trade were found to work to the disadvantage of the less developed countries. In a direct attack on comparative cost theory, Singer argued that specialization in raw materials production was a result of investment by the center. Singer questioned other aspects of conventional economic theory including such basics as the operation of the multiplier discussed below.

Girvan [1973] traces the growth of dependence economics through the 'fifties and 'sixties. Development was seen as hampered by the small size of most developing nations and structural and functional ties with the center. This led to emphasis on regionalism, increasing regulation of foreign concerns and land reform to reorient agriculture away from export production. Conclusions were essentially reformist, attempting to correct what were seen as aberrations in the international economic system due to the unequal size and development

of the participants.

A major change occurred in the last decade. The Marxist-Leninist imperialism tradition was brought into the dependence school by such writers as Frank [1964, 1966], Magdoff [1969], Emmanuel [1972], Amin [1974] and Barrat-Brown [1974], and Jalee [1968, 1969], whose work is mainly descriptive. The result is an emphasis on examining the consequences for the periphery of the historic and continuing development of capitalism as a world system. Their major contention is that since the demise of colonialism, exploitative domination of the periphery has been continued through the workings of the international economic system and policies of the governments of the center designed to maintain that system. The key elements are international trade and the ability of capital to move and be invested anywhere. The results are extraction of surplus from the Periphery and structural distortions of the peripheral economies which tie them to the demands of the Center and retard or prevent indigenous development.

In historical perspective, Wallerstein [1976] argues that the development of the Center/Periphery relationship was integral to the process of European industrialization. Rather than viewing industrialization as a process which began in Britain and gradually spread through the world, he argues that industrial advance in some areas required the development of others into peripheral areas for the supply of foodstuffs, raw materials, and labor. As Western Europe developed industrially, Eastern Europe and the overseas colonies developed along non-industrial lines to complement the new Center. This argument is similar to that of Frank, who holds that the current "underdevelopment" of much of the world is the outcome of a long historical process of global development.

The external expansion of capital due to the falling rate of profit in the center is accepted by many current writers, notably Amin. It is rejected by Emmanuel, who holds that profit levels are essentially equivalent. It is not accepted that this is a solution to surplus absorption problems, as return flow of profits only exacerbates the original problem. The explanations offered by conventional theorists are generally accepted, but conclusions regarding the effects of investment differ radically. It is assumed by dependence theorists to be a mechanism of exploitation and domination, as will become apparent.

The comparative cost theory comes under strong attack from several writers, on grounds that “natural” advantage is historically conditioned, and that trade relationships are imposed rather than rationally decided. Sideri [1970] notes that Ricardo’s initial example, the exchange of British textiles for Portuguese wine, was part of a larger agreement imposed on Portugal in exchange for British protection of her claims in the New World. Barratt-Brown notes that the theory holds that protective tariffs would affect only the protecting nation, to its detriment, and thus has traditionally favored free trade, but that protection has been the rule rather than the exception. The most comprehensive attacks on the theory are by Amin and Emmanuel. Amin notes that Ricardo assumed immobility of capital, and that without this assumption, under the terms of Ricardo’s numerical example, England would use resources most efficiently by transferring production of both wine and textiles to Portugal. Further, the bulk of peripheral exports comes from high capital-intense sectors, rather than the high labor-intense sectors where the greatest comparative factor advantage, low wages, lies; and the bulk of world trade is within the center, where there is least difference in comparative factor costs. He goes on to examine the predicted effects of differing levels of productivity increase between industrial and primary commodity producers on relative price levels, and finds comparative cost theory contradicting historical trends.

Emmanuel devotes a chapter to comparative cost. Using Ricardo’s formula and Marx’ price of production formula, he shows that, given differing organic composition of capital and differing wages, the theory does not predict optimum resource usage. In essence, historically conditioned reward structures for the various nations determine comparative factor cost advantages and prevent trade from operating as theory predicts.

Other processes are offered to explain international trade. Barratt-Brown’s analysis of formation of trade patterns is typical. In the early colonial period, the home countries enforced trade monopolies of varying degree on their colonies. The independence of the Americas, and British domination of the seas, to a large extent ended the formal monopolies, but Jalee [1969] uses 1965 trade data to show that much of the trade with the periphery still exhibits patterns similar to the colonial structure in terms of trade partner concentration, although this is declining with time.

Amin argues that even in the absence of national monopolies, the trade of peripheral nations usually remains in the hands of a few foreign firms controlling both exports and imports to and from the center, with implications for transfer and monopoly pricing. Magdoff provides data on both the number and shares of U. S. firms active overseas which support this contention.

An interesting argument follows from the gross distribution of international trade. In rough figures, the center accounts for 80% of all trade; 80% of the center's trade is within the center. The periphery accounts for 20% of all trade, but 80% of it is with the center. Not only is the center's share of the total increasing, but so is its proportion conducted exclusively within the center. In terms of gross trade, therefore, the periphery is far more tied to the center than vice versa, but increasingly "marginal" to it. Some conventional theorists, like Miller [1970], argue that the center can do without the periphery, if necessary, especially as technology provides substitutes for an increasing range of raw materials. Magdoff, Jalee [1969], and Barratt-Brown attack this argument by noting that the center is dependent on the periphery for a number of critical materials and likely to remain that way in the future. Jalee attacks the entire thesis of increasing marginalization, noting that it follows only in terms of prices, which are affected by declining terms of trade for the periphery, rather than volume of commodities transferred; and that much of the increased trade with the center is of an "artificial" nature (Volkswagens for Fiats), induced by removal of trade barriers within the common market and not comparable to trade with the periphery.

The composition of trade, as well as gross patterns, is of major significance. It is characteristic of peripheral nations that their exports consist of only a few primary mineral or agricultural commodities. Center nations tend to offer a wide range of manufactured products as well as agricultural commodities. The difference in variety of exports reflects differing levels of industrialization.

Imperialism theorists hold that this is a result of a distortion of peripheral economies toward development for the exclusive benefit of the center. Amin's major thesis is that this is the result of development of peripheral capitalism as a result of external penetration

rather than indigenous growth. Historically, capitalism originated in Europe and gradually extended to the rest of the world. When the Europeans sent out ships, they were looking for things to take home—originally exotic plants and plundered gold, later the products of mines and plantations. Barratt-Brown holds that capitalism was introduced to what is now the periphery specifically for trade with the home country. As the periphery developed, it maintained this orientation. Many writers have noted the major part of the early infrastructure, the railroads (financed by European capital), are laid out for the purpose of carrying primary products to the nearest convenient port.

Various factors encourage continued specialization in production of primary products for export. Amin argues that as monetarization of the peripheral economies progressed, in part through imposition of colonial taxes, even small producers found it profitable to switch from production for local consumption to production for export. Introduction of manufactured consumer goods from the industrial center destroyed the market for local crafts, forcing many back to subsistence agriculture. Related to this is a high propensity to import, and increasing imports must be paid for with increasing exports.

The ruling classes of peripheral nations are seen as dependent on existing foreign relationships for the maintenance of their fortunes. Their interests are held to be much closer to those of foreign concerns operating in their nations than to those of the general populace. This contention is supported by Rubenson [1976], who found that the degree of inequality within states was strongly related to the position of the state in the world economic system. As direct foreign financial control and dependence on foreign markets increases, the wealthiest strata of the nation captures an increasing share of national income.

Amin and Magdoff argue that foreign capital remains heavily concentrated in the export sector. Indigenous capital based on income from foreign trade tends to be plowed back into increased land holdings for export production, the import/export business, and other non-industrial ventures closely connected with the foreign trade, or hoarded in the form of land or gold. Surplus taken as profit by the foreign firms tends to be repatriated to the home country, or plowed back into the local export sector. The net result is that surplus created

by the growing export sector is not generally available for development of other sectors. All of these factors contribute to the specialization of peripheral nations as sources of exports for the center. It is argued that specialization is the overriding determinant of peripheral development, in that it retards the balanced development of the remainders of the national economies.

While the rest of the peripheral industrial sector remains at a low level of development in terms of both extent and modernity, Amin and Dos Santos [1970] argue that the export sector is usually highly modernized, with high organic composition and high productivity. Baran notes that although it provides a large part of national production, the export sector provides comparatively little employment. Amin argues that this, coupled with destruction of crafts, has led to inordinate growth of the tertiary sector compared to the center, high rates of urban unemployment, and “disguised” rural unemployment as ruined craftsmen return to subsistence farming. Amin holds this to be a result of the incompleteness of capitalism’s penetration of the periphery. The external orientation prevents the destruction of some traditional modes. This is reflected in the low levels of productivity outside the export sector and the continuation and expansion of subsistence agriculture.

The major internal result of specialization is argued to be a disarticulation of the peripheral economies, a lack of interchange between the various sectors. Brewster [1973] has developed a method of quantifying this phenomenon, a matrix showing the inputs from each sector to every other sector. In the center, each cell in the matrix shows sectoral interchange, but in the periphery many cells are empty, showing lack of interchange. This implies that necessary inputs, provided internally in the center, are provided externally in the periphery. Sunkel [1973] and Frank [1966] note that this is particularly evident in the dependence of peripheral industry on intermediate and capital goods from the center. Amin generalizes this as the interposition of the center between the various industrial sectors of the periphery.

This disarticulation has implications for the application of conventional economic theory outside the center. A major concept is the multiplier, a ratio of expenditure to income generated by it as it percolates through the economy. Investment or government spending, it is

argued, creates income, which creates demand, which creates further investment, and so on, until the effect peters out. The multiplier, and the related accelerator, are the basis of the trickle down theory popular among capitalists, Congressional taxation committees, and the group of economists at the University of Chicago now advising the military governments of Chile and Brazil. Many writers note that the interposition of the center between sectors of the peripheral economies, repatriation of profit, and the high propensity to import have the effect of transferring demand, investment, and the multiplier to the center. Thus secondary investment and growth generated by expenditure in the periphery occurs in the center. Galtung [1971] makes a similar point in his discussion of spin-off effect of differing levels of processing. For this reason he argues that merely increasing the prices of exports is insufficient for development.

Disarticulation also has a major effect on the ability of peripheral governments to plan, control, and induce effects in their nations' economies. Even assuming, as most writers do not, that local rulers are not dependent for their fortunes on the export trade and thus in league with foreign capital, the tools used to manipulate center economies, policies intended to affect investment, employment, spending and saving, are limited by the external component of the economy. Brewster [1973] uses a technique based on this assumption to measure dependence, a correlation matrix of such variables as income, spending, investment and other commonly used economic variables. In the center, correlations are high, implying that manipulation of one will have significant effect on the others. In the periphery they are low, leaving planners near helpless. Coupled with this are various restrictions imposed by center-controlled financial institutions, discussed below in the sections on debt, aid, and balance of payments.

Aside from internal disarticulation, specialization in raw materials export can have major effects on a nation's returns from transactions in the world market. Apart from such things as transfer pricing, returns may decline due to unfavorable movement in the terms of trade. "Terms of trade" are usually a ratio of the prices received for exports to the prices paid for imports. Recent demands by OPEC that the price of oil be pegged to an index of the prices

paid for the industrial goods they import reflect a conviction that unfavorable movements in the terms of trade are undermining their gains from cartelization.

Barrett-Brown analyzes terms of trade over the last two centuries. Historically they have fluctuated but, over the long run, and especially in the last two or three decades, have declined for the periphery and its products. Numerous explanations are provided for this fact. Raw materials and agricultural commodities cannot, in general, be differentiated, and prices tend to be set by the workings of the world market. Industrial goods often can be differentiated, raising the prospect of oligopoly-administered prices. Monopolist practice on the part of center firms would tend to force declines in peripheral terms of trade. Emmanuel argues that terms of trade for raw materials have not declined for the center, but Barratt-Brown argues that his examples are exceptions.

Singer and Prebische noted that productivity gains can be expressed either by lowering prices or raising wages. Historically, labor organization has led to increased wages in the center, while the periphery retains subsistence wage scales and lowers prices. The result would be declining terms of trade for the periphery. A similar argument forms the basis of Emmanuel's unequal exchange thesis. He argues that wages are the determinant of prices, in contrast to most conventional and marxist economists. This leads to the argument that unilateral wage hikes in the periphery would be sufficient to reverse the flow of surplus to the center caused by unequal and declining terms of trade and to encourage fixed capital formation in the periphery. This conclusion is heavily criticized by Bettelheim (in Emmanuel [1972]) and Barratt-Brown on grounds that prices are not determined by wages.

The decline in the terms of trade leads to problems with peripheral balances of payments. Many peripheral nations suffer chronic and growing balance of payments deficits. This develops when the amount spent on imports continually exceeds the amount received from exports. Also entering the equation are capital transfers like investment, profit repatriation, loans, and debt service payments. When deficits get out of hand, the usual remedy is negotiation of loans to overcome immediate problems. Failing this, the more drastic step of devaluation is available. This raises the price of imports and lowers the price of exports, and

presumably affects demand to an extent sufficient to remedy the deficit. Other remedies are forcing an increase in exports, difficult for the periphery due to inelastic demand in the center, and reducing imports by erecting trade barriers, a course frowned upon by the center, as discussed below.

Barratt-Brown notes that the British ran a continually negative balance of trade in the last century, and achieved positive balances of payments only due to returns on overseas investment. Magdoff notes that the U.S. suffered chronic balance of payments deficits after the Second World War but was under little pressure to devalue the dollar because it was used as a reserve, backing the currency of many countries under the IMF agreements.

Chronic balance of payments deficits and the loans negotiated for “developmental” purposes and to overcome immediate financial crises (sometimes continual) contribute to growing national debts in the periphery. Unlike the U.S. where the national debt is held by domestic investors, the periphery’s debt is held largely by governments and lending institutions of the center. Jalee [1969] quotes World Bank data from 1964 for an estimate of 32.7 billion dollars in outstanding debt for 97 peripheral nations; Pinto and Knakaz [1973] estimate \$34 billion for Latin America alone; and Amin’s estimate for 1967 is \$41 billion. For perspective, Amin estimates that debt service in 1967 cost the periphery an amount equal to approximately 10% of export income, as against 3% in 1956; and from 40 to 80% of new external aid, depending on region.

That such a large proportion of new aid goes to service debt opens the question of the purpose of aid itself. In contrast to Chenery and Strout [1966], who present the conventional theory that aid succeeds in overcoming specific bottlenecks hindering development, citing the examples of Israel, Greece and Taiwan, dependence theorists hold that aid is intended to open and maintain peripheral areas as stomping grounds for center capitalism. Magdoff, in a chapter devoted to general slander of U. S. aid programs, quotes President Kennedy praising aid programs to a number of specific countries for their success in aiding the penetration of U.S. business. The contention is that the State Department and U. S. foreign policy are run by and for the benefit of the class of monopoly capitalists.

Two comparative studies support the assertion that aid and penetration by U.S. business are related. O'Dell [1974] finds military assistance, but not outright intervention, to be related to several variables measuring economic ties with the U.S. Rosen [1974] finds revolutionary change of government, both to the right and to the left, to have predictable effects on both operations of U.S. business and official aid, and concludes that aid and business are related.

Madgoff examines the regulations governing assistance under Public Law 480 (Food for Peace) and IMF loan policies. He finds assistance under P.L. 480, generally thought of as a gift, requires recipient nations to place capital in developmental funds controlled by the U.S., and argues this to be a disguised subsidy to U.S. corporations. On the IMF, he finds that to qualify for loans, usually requested to meet balance of payments crises, nations are required to take steps such as elimination of trade and investment barriers and restrictions on capital repatriation, which have the effect of creating a "stable investment climate." Case studies of aid to Pakistan by Alavi and Khruso [1964], and of Brazil by Frank [1964] support these conclusions. Horowitz [1964] studies the Alliance for Progress and finds that it failed due to reliance on local ruling classes to accomplish desired reforms. He also notes that a number of reforms called for conflicted with the Hickenlooper amendment to the U.S. Foreign Assistance Act of 1962, which required the stoppage of aid in certain circumstances involving expropriation of American owned property. The Alliance for Progress goals called for land reform and redistribution. Much land in Central America and the Caribbean is owned by U.S. corporations. Certain other reforms called for actions in conflict with IBRD and IMF regulations requiring monetary stability and balanced budgets to provide stable investment climates. While the Alliance called for diversification of peripheral economies and encouraged industrialization, Madgoff notes in a similar context that the U.S. Tariff Code applies restrictive levies on imports of various peripheral exports when processed beyond a certain level. The effect is to maintain dependence on primary exports.

In general, while governments of center nations are publicly committed to advancing development in the periphery, the effect of their actions is to maintain existing situations while

real aid goes to corporations with overseas operations.

In the above sections various processes have been outlined, held by dependence theorists to be the working mechanisms of ongoing imperialism. Their cumulative effect is a net transfer of surplus to the center and distortions of peripheral economies created by external orientation. The conclusions reached, with the exception of Emmanuel, are that development in the periphery will continue to be retarded so long as peripheral economies remain enmeshed in those of the center. Rapid development is possible only insofar as ties to the center can be broken and avoided. These conclusions stand in sharp contrast to the path to development recommended by conventional economists, which involves total integration of peripheral economies with those of the center.

Propositions to be Tested

This study examines the effects of several phenomena resulting from participation by peripheral nations in the world capitalist system. Specifically examined are issues involving penetration by foreign capital and integration into world markets, which have been dealt with in several recent empirical studies. It uses a data base that is in some respects more complete, using more comprehensive time series.

The approach is limited as it does not address many aspects of importance to dependence theory and does not allow any conclusions on the acceptance or rejection thereof. A number of propositions applying to peripheral nations were constructed positing certain relationships between trade, investment, and development. These propositions follow from the assertions of conventional theory and constitute tests of certain aspects of it.

1. Existing foreign investment has a positive effect on economic growth.

Conventional theory holds, in effect, that all investment, foreign and domestic, is beneficial to growth. Dependence theory holds that foreign investment tends to retard growth by distorting the indigenous economy away from balanced growth, making it dependent on outside inputs and orienting it to non-indigenous goals. Further, repatriated profits constitute a drain of needed resources and a hindrance to domestic capital formation.

2. New incoming foreign investment has a positive effect on economic growth.

Conventional theory holds that foreign investment is useful to aid domestic capital formation, overcome balance of payments problems by bringing in needed foreign exchange, and aiding in the development of skills and attitudes necessary for sustained development. Dependence theory holds that new capital may produce growth or the appearance of growth but eventually becomes old capital, with all the disadvantages listed under proposition 1.

3. Excess of repatriated profits over new investment does not retard growth.

To the extent that conventional theory recognizes that profits may eventually exceed

investment, it holds that the initial investment created a gain in the domestic economy that would not have otherwise occurred, resulting in a net gain. In large measure, this combines propositions 1 and 2. Dependence theory holds that the net capital loss to the center shifts surplus needed for growth, retarding peripheral growth in relation to that of the center, and that the periphery would develop if left alone.

4. High levels of integration of the domestic economy with world markets have a positive effect on growth.

Conventional economists hold, in part under the theory of comparative costs, that participation in external trade allows nations to gain foreign exchange to be used for the import of consumption and especially capital goods which they cannot yet produce or which economies of scale prohibit their producing. Dependence theorists hold that participation in world markets represents little more than subjugation to the center, the periphery being limited to production of raw materials for the center. Further, it facilitates extraction of surplus from the periphery in the form of hidden transfers due to unfavorable terms of trade, as well as open transfers like shipping costs.

5. Orientation of the economy to production for export has a positive effect on economic growth.

Conventional theory holds this to be advantageous for the same reasons as participation in world markets in general. Often it is phrased in terms of increasing exports to gain more foreign exchange. Dependence theory holds that this only wires peripheral economies more strongly into a system dominated by the center and responsive only to center needs and goals. Further, it distorts the economy by drawing needed resources from sectors important to domestic development.

Review of Related Studies

Chenery [1960] examines a panel of over 50 nations in 1950 and 1955 with respect to the size and sectoral composition of national income, production, imports and exports, and their populations and per capita incomes. He concludes that some countries can develop, in the sense of increasing national income, without industrialization by increasing production of primary commodities for export. Resulting foreign exchange is to allow import of advanced commodities for a coming mass consumption society. Chenery does not claim this to be the proper road to development for every nation, and this does not apply directly to cross-sectional examination of any of the propositions. Examination of data used for testing proposition 4, however, should suggest whether any of the nations in the sample have taken this road.

Deutsch and Eckstein [1961] tested a theory traced to Sombart in the early part of the century which holds that external trade as a proportion of the national economy declines with increasing development. This was found to be true in case studies of the historical development of several center nations. In a follow-up study, Deutsch, Bliss, and Eckstein [1962] examined the relationships between the ratio of external trade to gross national product in 1955 with GNP, population, sovereignty and literacy in a group of 74 nations. The trade ratio was found to be negatively related to population, positively related to political dependence measured by sovereignty, and unrelated to GNP. This study suggests that examination of proposition 4 should consider population.

Szymanski [1976] examined effects of foreign aid and capital penetration on growth rates in the population of 19 Latin American republics of longstanding independence. He found that both aid and value of existing U.S. investment were positively related to increase in GDP per capita and growth in the industrial sector in the 1960s, while excess of repatriated profits over new investment was negatively related to both. Propositions 1 and 3 re-examine these findings which support proposition 1 and deny proposition 3. Szymanski also examined the absolute magnitude and direction of capital flow, for a limited part of the

population between 1968 and 1972, and found that repatriated profits exceed investment. In a comparison of growth rates published by the U.N. he determined that growth rates in Latin America were lower than those in both developed capitalist and centrally planned economies, a finding similar to that of Jalee [1969]. This led to the conclusion that current dependence theory predicting an extraction of surplus from the periphery was more accurate than Lenin's theories of capital export from the center to the periphery. His overall conclusions were that dependence retarded growth but that within the class of dependent nations dependence was positively related to growth.

Kaufman, Chernotsky, and Geller [1975] examined the effects of a number of variables intended to measure dependence on a group of variables measuring economic, social and political development in a sample of 17 Latin American republics. The dependent variable of interest here was the annual average increase in GNP during the 'sixties. Growth was found to be negatively related to export concentration, measured by the 1965-68 average value of the two leading exports as a per cent of total exports. Growth was found to be positively related to measures of trading partner concentration; value of existing foreign investment per capita; and value of new foreign investment in 1967, both per capita and as a percentage of GNP. The latter two findings constitute confirmation for propositions 1 and 2 respectively. In general, the rest of their findings were that the independent variables were found to correlate positively with income inequality; and negatively with land inequality, stability of growth, favorable balance of trade and four variables intended to measure development of liberal political institutions. Their main conclusions were that dependence theory does not adequately predict growth rates or land inequality, but may be useful for treatment of the rest of the examined dimensions.

Chase-Dunn [1975] studied the effects of dependence on economic development and income inequality in a sample of low income nations. Dependence was measured by repatriated investment income per capita averaged from 1950 to 1955, interpreted as an indication of the amount of penetration of foreign capital; and by the degree of government

indebtedness to external agencies. The study examined change over periods ranging from 10 to 20 years, using 1950 as the base year. Development was measured by GNP per capita, per capita electricity consumption, and the percentage of the male labor force not employed in agriculture. Small but significant negative relationships were found to exist between both measures of dependence and growth; and a small positive relation between both and income inequality. The negative relation between investment income and growth is grounds for rejection of proposition 1. Chase-Dunn's major conclusions were that dependence theories are superior to conventional theories for prediction of results of relations between center and periphery. This conclusion was based largely on the finding of negative relationships between dependency and growth.

Summary with respect to propositions

1. Existing foreign investment has a positive effect on economic growth.

This proposition is supported by both Szymanski and Kaufman, et. al., by findings of a positive relation between fixed investment and economic growth. Chase-Dunn's findings deny the proposition on grounds of a negative relation between investment income repatriated, interpreted as a measure of fixed investment, and growth. This conflict has occasioned a small battle of footnotes between Chase-Dunn [1975, p. 726] and Szymanski [1976, p. 64]; the issue is whether or not dependency retards growth within the class of dependent nations, which is the question addressed in the proposition.

2. New incoming foreign investment has a positive effect on growth.

Kaufman's study supports this proposition, finding a positive relation between new investment and GNP growth. Chase-Dunn quotes his Ph.D. dissertation to the effect that the posited relation will be found, not because investment contributes to growth but because growth and active economies attract investment.

3. Excess of repatriated profits over new investment does not retard growth.

This proposition is from Szymanski, who contends that this is a more appropriate measure than repatriated income alone because profit may be reinvested in some nations to a greater extent than in others. His findings deny it, on grounds of negative relation between net capital flow from 1968 to 1972 and growth from 1960 to 1968. The choice of time period is questionable to the extent that profits and investment fluctuate over time, as the independent variable is measured at a later time than the dependent. Chase-Dunn's contention that capital is attracted to growth can be reversed to say that capital is repelled by stagnation, which could explain Szymanski's findings here.

4. High involvement in world markets has a positive effect on growth.

Deutsch et. al. raise two issues with respect to this proposition which should be taken into account: the likely effect of population on the extent of market involvement in proportion to the domestic economy; and the theory that this proportion decreases with development. Chenery contends that it is possible for a nation to achieve high consumption levels without industrial development via participation in world markets. This issue should be examined to avoid faulty interpretation of possible findings.

5. Orientation of the economy to production for export has a positive effect on economic growth.

Chenery's assertion that this may be working for some nations suggests close examination of anomalies in the data. No other direct cross-national examinations of this issue were noted.

Data and Analysis

Sample and Data

Data were obtained for 18 Latin American Republics. The group is sufficiently large for cross-national statistical comparison, while its relative homogeneity eliminates or reduces many of the problems common in comparing different nations. While the nations differ in many respects, both in divergent historical development and resource base, they share a common religion, a long history of formal independence, and with the exception of Brazil, a common language based on early conquest and domination by Spain. It is assumed that during the period studied all were more closely tied to the United States than to any other industrial nation. Haiti, though French speaking, deserved inclusion on ground of geographic proximity and long independence, but data were unavailable for much of the period. Cuba was omitted due to its much shorter period of independence and its withdrawal from the capitalist economic system in the middle of the period studied.

Most of the data used were published by the International Monetary Fund [1972]. These include net repatriated investment income, net incoming private capital (excluding that going to the central government), exchange rates, value of two largest exports, gross domestic products, consumer price indices, midyear population estimates, and value of exports and imports as a percentage of gross domestic products. Of these, domestic products, consumer price indices, and population estimates are based on United Nations data, the remainder on response to surveys filed annually with the IMF by responding countries. Data were available for 14 countries for the period 1950 to 1970, and for all 18 countries from 1958 to 1970. Data on value of U.S. fixed investment in 1950 for 16 nations are from the U.S. Office of Business Economics [1950] who for some reason combine Uruguay and Paraguay. Estimates of gross national product per capita in deflated dollars for 1950 and 1969 are from the IBRD [1969].

Variables Constructed

INCOME/GDP. This is intended to measure the weight of foreign fixed assets in national production. It represents annual averages calculated over various time periods.

FIXED ASSETS/GDP. This variable is also intended to measure weight of foreign assets in the domestic economies, but reflects only those of U.S. corporations reported to the commerce department for the year 1950.

INVESTMENT/GDP. This is intended to measure the weight of new incoming private capital in the domestic economy. Annual averages were calculated for various time periods.

INCOME -- INVESTMENT. This measures the net magnitude of private capital flow, interpreted by Szymanski as a measure of exploitation of a national economy by U.S. business. It is calculated as an annual average over various time periods.

$\frac{\text{INCOME} - \text{INVESTMENT}}{\text{GDP}}$. This is the same as Szymanski's measure above, but standardized on GDP to ascertain the weight of exploitation in a national economy.

TRADE/GDP. This is intended to measure the weight of foreign trade in the national economies and be interpreted as a measure of the degree of integration into world markets. It is the sum of percentages of exports and imports in GDP reported by the IMF, supplemented heavily by calculations from data reported in national tables of the same volume. Annual averages for various time periods were calculated.

EXPORT RATIO. This is the summed value of the two largest exports as a percentage of GDP. It is intended to measure the extent of specialization in production for export as recommended by comparative cost theory. Annual averages were calculated for various time periods.

GDP GROWTH. This is a ratio of deflated per capita GDP at time $t+i$ over time t . It is calculated for various time periods and is a measure of percentage growth over those periods. Endpoints are averaged with the years immediately preceding and following to avoid short term fluctuation.

Reliability

Except for population estimates, consumer price indices, and fixed assets in 1950, all data are as reported by responding nations to IMF or United Nations annual surveys. As such, they are subject to possible different accounting techniques or reporting procedures in the various countries. The accuracy of estimates likely varies between countries. At best, even in the United States estimates of aggregates like GDP are guesses based on the best available information. In countries where much of the population lives by subsistence farming or by odd jobs in the crevices of the cities, estimates of production and income are likely to be low.

Outright falsification may also be a problem. The Diebold Study fairly blatantly suggests padding data that go into international data banks that may be used by investors. If one accepts that the U.S. Government plays games with statistics, consider Brazil.

All of these factors affect the dependent variable, GDP GROWTH. In addition, they are deflated using a consumer price index of completely unknown reliability.

Population estimates used to standardize GDP are often regression estimates between irregular censuses that are official guesses of varying accuracy. An example is Brazil which included estimates of Amazon Tribal groups in the middle of the period examined here.

The reliability of aggregates like GDP expressed in a common currency over time is so low that comparing them cross-nationally using advanced statistical techniques could easily lead to conclusions based on comparative error rather than real information. If all of the data used to construct the dependent variable are in error by 10%, in the worst possible directions, the aggregate error would be 80%. As the direction and size of error are likely to be similar across time within each nation, the use of ratios is likely to correct much of this. Data which express aggregates in a common currency, including those used by Chase-Dunn, bring in the additional factor of arbitrary exchange rates. In general, reliability of GDPs must be viewed as weak. They have here been left in national currencies, and it is assumed that ratios over time eliminate a good part of the error. Better data may become available in the future as a result of work in the U.N. which attempts to overcome the above problems [Kravis, et. al., 1975].

Investment and income data are usually reported in dollars, and their reliability is subject to comprehensiveness and accuracy of reporting by the various nations. There are also differences in accounting techniques with regard to foreign investments. Profits on foreign investments that are plowed back locally are usually, but not always, reported as foreign investment. Most countries have a period during which these profits may remain in a country without being considered domestic, but this varies.

Trade data are likely to be relatively accurate. Dollars are used in most transactions, and estimates are reported in dollars. Foreign trade has long been one of the most heavily scrutinized and documented facts of economic life.

The data on U.S. fixed investment are without doubt unreliable estimates of real value. Book value is often artificially depreciated and understated for tax purposes. To the extent that they are equally understated across the board they may be accurate indicators for comparative use.

Validity

A number of questions are raised with regard to several variables. The gravest are objections to the use of such aggregates as GDP to measure development. Amin holds that they may reflect only the foreign component of the economy and have no relation to the aggregate wealth or standard of living of the general population. This argument stands on two legs. First, the common aggregates cannot accurately measure the product of independent farmers or craftsmen whose transactions are likely to escape official notice. Second, they include export production of foreign companies which may use only one local input, land, a raw material, or cheap labor, while the remainder of its materials, personnel, management control and technology are completely divorced from the local economy. While a small strata of the population involved in the foreign sector may remain wealthy, much of the rest of the population is rendered superfluous and forced into deepening poverty. Amin and Frank argue that this is the real meaning of "development." On the other hand, Szymanski [1972] notes that Britain in the last century and the Soviet Union in the 1930s were hell for workers

and peasants respectively, but are both developed under any definition. A similar view is held by conventional theorists. As that is what is being tested here, on its own grounds use of aggregates is mandatory. This means, however, that conclusions cannot be drawn with regard to dependence theory from any findings from this study.

More prosaic are questions regarding the use of repatriated income and investment to measure economic penetration. First, the data used here are *net* figures, rather than debits or credits listed on balance of payments reports as used by Chase-Dunn. While this is a minor point with regard to Latin American nationals, as their income from foreign investment or current investments abroad are minuscule compared to that of foreigners operating in their countries, fund transfers across borders within multinational organizations can have a major effect. In 1962 Venezuela had some new foreign investment. This would represent a positive increment if only credits were used; however, transfers by international oil firms coupled with purchase of oil investments by the Venezuelan government brought the net investment figure to a negative drain of close to half a billion dollars. As noted under reliability, the relation between investment and repatriated income is complex. From this, Szymanski argues that income data alone represents only the amount of surplus extracted, which may vary according to attractiveness of the country for new investment. For this reason, he uses a variable representing net incoming capital, combining investment and repatriated income. This writer agrees and will place more trust in tests using a similar variable than in those using either income or investment alone. Another problem involves Panamanian investment data. Much investment represents ships registered under the Panamanian flag of convenience; those ships may never see the country and their economic input is restricted to license fees. No adjustment was made for this.

With the exception of tests intended to reproduce those of others, GDP growth rates are standardized on a per capita basis, on the assumption that "development" should mean an advance in the standard of living rather than an increased population at the same level.

In order to check the possibility that the economic activities examined may have effects which vary according to the size of the indigenous economy, the 18 countries were divided

into two groups according to population size. Seven nations with populations greater than five million including Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela comprise the large group. This grouping is identical to that derived according to size of GDP.

Analysis

Due to the questionable reliability of much of the data and especially of the major dependent variable, Spearman's rho statistic of rank order correlation is used with one exception. Determination of direction of any relations found is sufficient for current purposes.

Questions on the direction of causality are addressed using cross-lagged panel correlation techniques described by Campbell [1963] and Pelz and Andrews [1964]. This technique measures variables at initial and final points in time, and correlates the presumed independent variable at the first time with the dependent at the second. The posited causal relation is then reversed and the test repeated. Comparison of the derived coefficients suggests the relative causal strength of each variable on the other. Comparison with coefficients derived at each point in time may help determine appropriateness of time lag used.

The exception to rank order correlation is a replication of one of Chase-Dunn's tests using panel regression techniques. The dependent variable at time $t+i$ is regressed on itself and the independent variable at time t . This controls for initial magnitude of the dependent variable, assumed to account for most of the variation at the second measurement. Chase-Dunn uses it to avoid problems caused by autocorrelation of variables standardized by division by such things as GDP.

A Note on Significance

Szymanski argues that as the data used are complete for the given population, they are significant at all levels given theoretical relationships between the variables. This argument is not accepted here. Although the two bodies of theory can collectively account for either positive or negative relationships, there is no guarantee that either is correct. Significance must be measured as a probability that correlation measures would be as high as are found given an absence of relationship between the variables.

Usual decision points for drawing conclusions are probability levels of .05 or lower under the null hypothesis. These levels are rarely achieved in this study, due largely to the size of the samples, as low as 7 in some cases. Significance levels of .30 and higher are therefore noted. It can be expected under the null hypothesis that around one-third of the rhos would reach this level of significance. In practice, of 65 rhos calculated, 50 were significant at the .30 level or higher, more than twice the expected frequency. Given the null hypothesis, the probability of finding r rhos significant at .30 in n independent trials is $\binom{n}{r} (.30)^r (.70)^{n-r}$. Twelve correlations for the entire sample were calculated using truly independent rank orders on the dependent variable. Ten were significant at the .30 level or higher. The probability of this occurring under the null hypothesis is less than .001. While any given correlation may be merely an artifact of the data, it is likely that any general patterns found reflect true relationships.

Results and Discussion

Chase-Dunn vs Szymanski

Replication of Chase-Dunn's techniques using his data sources for the Szymanski sample, regressing 1969 GNP per capita on 1950 GNP per capita and 1950-55 average debits on investment income yields a Beta of $+0.28$. This shows a relationship larger than that found in Chase-Dunn's sample (-0.22) but in the opposite direction. Data were available for 16 nations that met Chase-Dunn's sample requirement of 1955 GNP per capita but using net repatriated income rather than just the debit side. In none of the 12 cases where credit/debit breakdown was available were credits large. Bolivia and Guatemala, for which breakdowns were not available, showed net credits in 1952. If it is assumed the 16 were included in his sample of 38 the remaining 22 must have exhibited radically different growth behavior.

Capital Flow

An excess of repatriated profits over incoming new investment (including an undetermined amount of reinvested profit) between 1958 and 1971 amounted to over \$7 billion. This period was notable for increasing levels of investment, so the excess can be expected to increase as the investments mature, assuming no further increases in investment levels. Close to 85% of this excess was from Venezuela alone. Omitting Venezuela, if the entire excess were taken in 1969 alone, it would amount to less than 2% of the combined GNPs of the remaining 17 countries. Averaged over the entire period, the take would amount to less than one-tenth of one percent annually. This seems small enough to have little cumulative effect on growth rates. Venezuela, on the other hand, shipped out in profit an average of over eight percent of its GDP, and ranked seventeenth in GDP per capita growth from 1950 to 1970 and dead last from 1958 to 1970.

Foreign Investment and Growth

Three propositions relating foreign investment and growth were tested.

Proposition 1: Existing foreign investment has a positive effect on economic growth.

Proposition 1 is confirmed by a finding of a positive relationship between growth and both measures of existing foreign investment (Table 1). The effect appears more pronounced for nations with small populations, but the inordinate influence on the large group of Venezuela, with its high investment levels and low growth rates suggests that no conclusions be drawn. The overall positive relationship confirms previous findings of Szymanski, Chase-Dunn, and Kaufman, et. al.

Table 1: Correlation between GDP GROWTH and INVESTMENT INCOME/GDP, 1950-70 and 1958-70; and with FIXED ASSETS, 1950.

GDP GROWTH	FIXED ASSETS 1950	INVESTMENT INCOME/GDP		
		All	Large	Small
1950-70	.40 ^c n=13	.35 ^d n=14	.43 ^d n=7	.49 ^d n=7
1958-70	.22 ^d n=16	.39 ^c n=18	.04 n=7	.48 ^d n=11

a. p=.01

b. p=.05

c. p=.10

d. p=.20

e. p=.30

Proposition 2: New incoming foreign investment has a positive effect on economic growth.

This is the key proposition for conventional theory which holds new foreign investment to be a prime necessity for rapid development. The proposition is confirmed by the finding of a strong positive relation between average levels of new investment and growth. (Table 2). The confirmation is clouded, however, by questions on the direction of causality. Chase-Dunn argues that new investment does not cause growth, but rather is attracted to existing high growth rates. To test this assertion, cross-lagged panel correlations were calculated (Tables 3A and 3B).



Table 2: Correlation between GDP GROWTH and INVESTMENT/GDP 1950-70 and 1958-70, by population size.

GDP GROWTH	INVESTMENT/GDP		
	All	Large	Small
1950-70	.62 ^a n=14	.68 ^b n=7	.64 ^b n=7
1958-70	.49 ^b n=18	.85 ^b n=7	.73 ^a n=11

Table 3A: Cross-lagged panel correlatons between INVESTMENT/GDP and GDP GROWTH, 1958-63 vs. 1964-71, by population.

GDP GROWTH	INVESTMENT/GDP					
	All		Large		Small	
	1958-63	1964-71	1958-63	1964-71	1958-63	1964-71
1958-63	.14 ^e n=18	.33 ^c n=18	.68 ^c n=7	.57 ^c n=7	.09 n=11	.34 ^d n=11
1964-71	.36 ^c n=18	.17 ^e n=18	.21 n=7	.79 ^b n=7	.45 ^c n=11	.22 ^e n=11

- a. p=.01 d. p=.20
b. p=.05 e. p=.30
c. p=.10

Table 3B: Cross-lagged panel correlations between INVESTMENT/GDP and GDP GROWTH, 1950-57 vs. 1958-63, by population.

GDP GROWTH	INVESTMENT/GDP					
	All (n=14)		Large (n=7)		Small (n=7)	
	1950-57	1958-64	1950-57	1958-63	1950-57	1958-63
1950-57	.25 ^d	-.46 ^b	.72 ^b	-.67 ^c	-.18	.18
1958-63	.09	.36 ^c	.04	.68 ^c	.12	.46 ^d

- b. p=.05
c. p=.10
d. p=.20

Tables 3A and 3B allow comparison of the relation between past growth and new investment, in the upper right quadrant for each group, with that between past investment and new growth in the lower left. For the small population group significance levels are too low and rhos too close to draw conclusions. Significance levels and differences are large enough for both comparisons within the large group but results for the two periods are contradictory. The large negative correlation between GDP growth in 1950-57 and new investment 1958-63 suggests that past growth repelled new investment, an unlikely conclusion.

The relationship may be partly explained by a tendency for investment in a country to be cyclical. Heavy investment during a period may saturate available outlets leading to low investment in the next. This appears to be the case with the Venezuelan oil industry. For the two later periods, the positive correlation between investment in 1964-71 with growth during 1958-63 is sufficiently larger than its complement to suggest that Chase-Dunn is correct in arguing that investment follows past growth. Firm conclusions should not be drawn because of the high intra-period correlations, which suggest that the time lag used is too long. Poor reliability of the GDP data makes shorter lags unfeasible. If in fact the calculated correlations for the large group reflect true relationships, the nature of that relationship appears to have changed sometime during the 1950s.

Further complicating the relationship between investment and growth is Szymanski's contention that while foreign investment is harmful in the long run the existing dependence relationship makes it essential for growth, and that new investment masks the bad effects of the old. Proposition 3 tests this contention by separating the effects of the old investment from those of the new.

Proposition 3: Excess of repatriated profits over new investment does not retard economic growth.

Like the cross-lagged tests of Proposition 2, findings are contradictory between early and later periods (Table 4). For the period 1950-57 the proposition is confirmed, with no detrimental effect observed. For the two later periods an increasingly negative relationship is found between excess of profits and growth. For the 1964-71 period, Szymanski's findings are confirmed

using a larger sample and different data source. The calculated rhos are the same ($\rho = -.25$) for both absolute net flow and net flow standardized on GDP, very close to Szymanski's finding of $\rho = -.21$.

Table 4: Correlations between excess of repatriated income over new investment as percent of GDP ($\frac{\text{INCOME}-\text{INVESTMENT}}{\text{GDP}}$) and GDP GROWTH, by population for several periods.

GDP GROWTH	INCOME—INVESTMENT/GDP		
	All	Large	Small
1950-57	.37 ^c n=14	.42 ^d n=7	.29 ^e n=7
1958-63	-.18 ^e n=18	-.04 n=7	-.21 ^e n=11
1964-71	-.25 ^d n=18	-.29 ^e n=7	-.38 ^d n=11

c. $p = .10$

d. $p = .20$

e. $p = .30$

If the calculated correlations reflect true relationships, we must again conclude that a change in the nature of the relationship occurred sometime in the 1950s.

Trade Relations

Two propositions about trade relations were tested.

Proposition 4: High involvement in world markets has a positive effect on growth.

This proposition was confirmed for the period 1950-57 by a finding of a positive relationship between extent of foreign trade and growth (Table 5). For the two later periods the proposition is denied for the entire group, by the finding of negative correlations, but when the group is divided by population the results are contradictory. If the calculated correlations reflect true relationships, it appears that the effect of market involvement varies over time, possibly in a cyclic manner affected by population size. Again the period 1950-57 shows relations which support conventional theory.

Table 5: Effects of integration with international markets (TRADE/GDP) on GDP GROWTH, by population for several periods.

GDP GROWTH	TRADE/GDP		
	All	Large	Small
1950-57	.53 ^b n=14	.66 ^c n=7	.32 ^e n=7
1958-63	-.17 ^e n=18	.11 n=7	-.21 ^e n=11
1964-71	-.05 n=18	-.38 ^e n=7	.44 ^c n=11

b. $p=.05$

c. $p=.10$

d. $p=.30$

Proposition 4 can be considered a partial test of comparative cost theory, but does not directly address the question of specialization. Latin American nations are usually highly specialized, exporting two or three agricultural or mineral products and little else. Conventional theory recognizes that overspecialization may have adverse effects due to fluctuations in commodity markets, but under comparative cost theory and the developmental theories of Rostow, Chenery and company specialization for export is still recommended. Proposition 5 examines the results of existing specialization in Latin America.

Proposition 5: Orientation of the economy to production for export has a positive effect on economic growth.

Results of the test of Proposition 5 are identical in direction to those for Proposition 4, due to the large proportion of the two largest exports in total trade. Again, a positive relationship is found for the period 1950-57, confirming the proposition and supporting conventional theory (Table 6). Results for the two later periods do not consistently support or deny the proposition and again suggest cyclical behavior affected by population size.

Table 6: Effects of specialization for export (EXPORT RATIO) on GDP GROWTH, by population size for several periods.

GDP GROWTH	EXPORT RATIO		
	All	Large	Small
1950-57	.50 ^b n=14	.20 n=7	.38 ^d n=7
1958-63	-.35 ^c n=18	.03 n=7	-.35 ^d n=11
1964-71	-.12 n=18	-.29 ^e n=7	.20 n=11

b. $p=.05$ d. $p=.20$
c. $p=.10$ e. $p=.30$

The positive relation between specialization and growth for 1950-57 is of particular importance for conventional theory as this period comes closest to that of original capital formation during which Rostow and others suggest concentration on export industries for rapid capital formation.

The data assembled for these tests also allow a check of the assertions of Amin, Magdoff and other critics of comparative cost theory that specialization is a result of foreign penetration rather than wise local decision. The measure of existing foreign investment, INCOME/GDP, shows a strong positive relation ($\rho=.82$, $p=.01$) with TRADE/GDP, and with EXPORT RATIO ($\rho=.74$, $p=.01$). The extent of foreign investment is closely linked to both overall trade and specialization for export. This lays necessary groundwork for an attack on comparative cost theory but is insufficient in itself to disprove it. It does suggest that the benefits of trade accrue largely to the foreign sector.

Summary of findings

1. The conflicting results of Chase-Dunn and Szymanski are due to use of different samples. Chase-Dunn's results conflict with the present findings.
2. There was a net capital drain from Latin America during the period 1958-1970, of which 85% was from Venezuela. Venezuela had the lowest growth in domestic product in that period.



3. Foreign owned fixed investment and new foreign investment are found to be positively related to growth. Net private capital outflow was positively related to growth for the period 1950-57, but negatively related in the later periods.
4. Integration with world markets and specialization for export are found to be strongly related to the extent of foreign investment. They are also positively related to growth in the period 1950-57, but are inconsistent for later periods.
5. Several tests suggest that changes in the nature of the relationships between foreign investment and trade with economic growth occurred during the 1950s.

Conclusions

Implications for further research

The most interesting finding here is the evidence which suggests a change in the nature of several relationships during the 1950s. A number of possible explanations for this observed change should be examined.

1. Effects may vary according to cyclical behavior in the world economy. Positive effects of international investment and trade from 1950-57 may reflect world-wide expansion following the Second World War.
2. The observed changes may be an artifact resulting from changes in the aggregates used to measure growth. Many dependence theorists contend that the aggregates overrepresent the foreign sector while missing much domestic activity. Increasing capitalization of agriculture and/or continuing rationalization of aggregate accounting may have increased the weight in the aggregates of domestic sectors adversely affected by foreign operations.
3. The level of foreign investment may have reached some critical point at which its adverse effects are measurable. The average proportion of foreign investment in GDP for 1950-57 was 1.2%, increasing to 1.6% for 1958-63 and to 2.0% for 1964-71. This explanation is inconsistent with the findings for 1950-57, but might survive if those findings can be shown to be a result of a global boom masking adverse effects as suggested under 1.
4. The nature of foreign investment may have changed. Investments involving direct foreign operating control may have increased relative to portfolio investments. While both contribute to net capital outflow, portfolio investment does not necessarily involve the heavy emphasis on integration with foreign activities that comes with subsidiary operations of multinational firms. Dependence theory suggests that such a change would have an adverse effect on the local economies.

While the reliability of the data precludes use of sophisticated statistical technique for cross-national comparison, increasing length of available time series may allow of such techniques as spectral analysis for study of individual nations in the near future. Comparisons of

results for different nations could shed light on the points raised above.

Theoretical

Conventional theories which provide the rationale for United States policies and positions in international forums do not adequately explain the experience of Latin America from 1957 to 1970. The positive relationships between foreign investment and growth are as predicted, but the negative effects on growth rates when repatriated income exceeds new investment are not accounted for. The latter finding suggests that Latin American nations are trapped in a vicious circle which requires them to encourage increasing penetration by foreign concerns in order to overcome the negative effects of old penetration.

For 1950-57, conventional theory provides a reasonable explanation for the findings. The differing results for earlier and later periods suggest that rapid changes in the nature of international economic relations require constant revision and expansion of theories used to explain their effects on national development.

Variables used and propositions tested were derived from conventional theory and do not provide an adequate test of dependence theories. Certain findings for the post-1957 period unaccounted for by conventional theory are compatible with dependence theory. Coupled with previous findings, particularly with respect to continuing higher growth rates in the center predicted by dependence theorists but contrary to conventional theories, the current findings support increasing emphasis on the dependence approach. Nothing here suggests that economic spokesmen of the Periphery should weaken their current positions.

APPENDIX

APPENDIX

List of nations included in the study

Argentina*

Bolivia

Brazil*

Chile*

Colombia*

Costa Rica

Dominican Republic

Ecuador

El Salvador

Guatemala

Honduras

Mexico*

Nicaragua

Panama

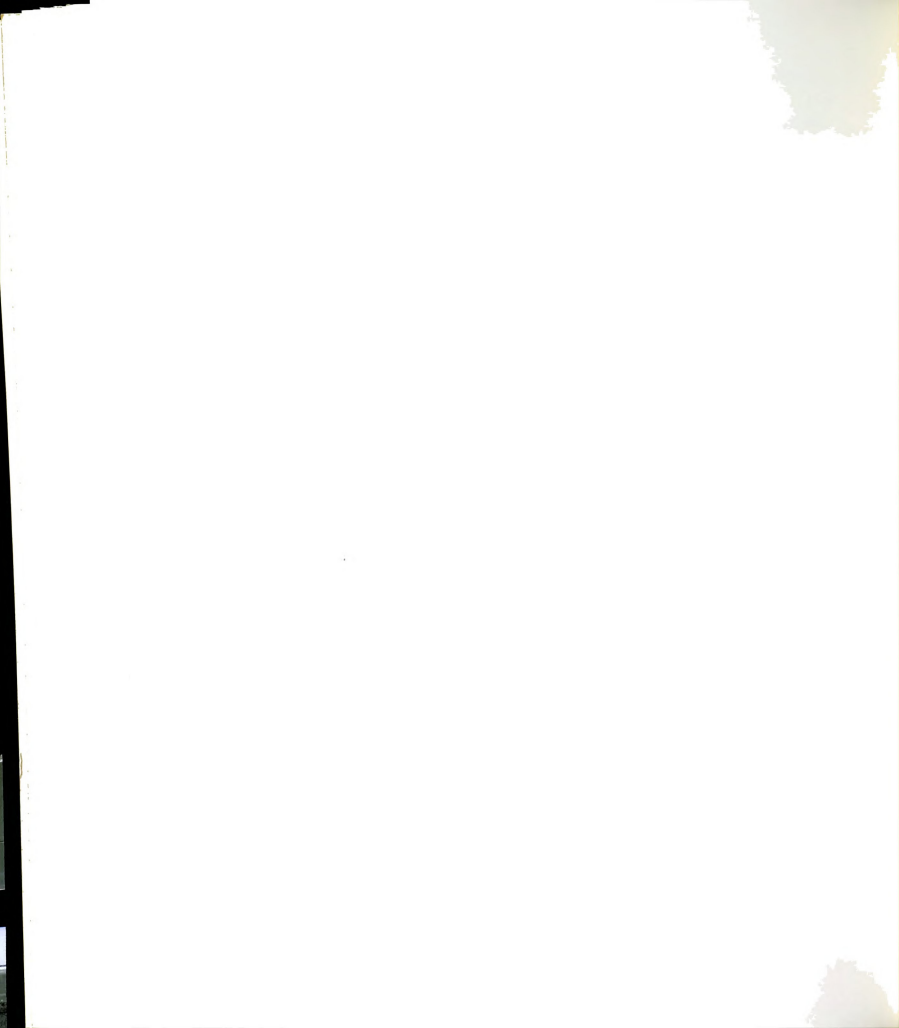
Paraguay

Peru*

Uruguay

Venezuela*

* Nations included in large population group



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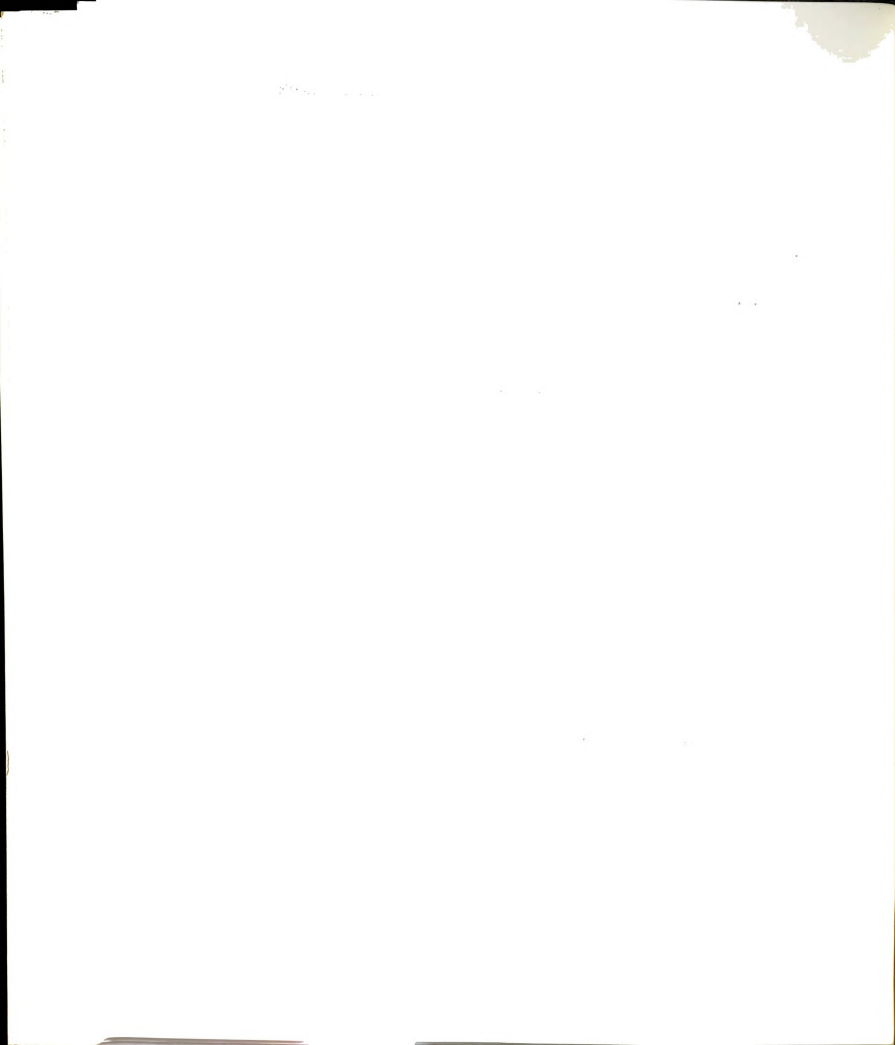
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