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EXPORT ALLIANCES AS A MECHANISM OF DEPENDENCE CONTROL IN THE WORLD-SYSTEM: THE CASE OF OPEC

The University of Oklahoma PH.D. 1983

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GRADUATE COLLEGE

EXPORT ALLIANCES AS A MECHANISM OF DEPENDENCE CONTROL IN THE WORLD-SYSTEM: THE CASE OF OPEC

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fufillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

BY

SHAHIN GERAMI

Norman, Oklahoma

1983

EXPORT ALLIANCES AS A MECHANISM OF DEPENDENCE CONTROL IN THE WORLD-SYSTEM: THE CASE OF OPEC

Approved by:

Dissertation Committee

EXPORT ALLIANCES AS A MECHANISM OF DEPENDENCE CONTROL IN THE WORLD-SYSTEM: THE CASE OF OPEC

BY: SHAHIN GERAMI

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This paper is concerned with the role of export alliances in the world-system and their impact on the socio-economic structures of their members. World-system theory argues that the capitalist world-economy and free international trade result in primary product specialization in Third World countries which, in turn, intensifies their economic underdevelopment. The school of neoclassical economics, on the other hand, maintains that when countries specialize in the production of those goods in which they have a comparative advantage and exchange them for other goods, the result is a larger output at the world level.

This paper is a critical evaluation of these models. Export alliances among commodity exporting countries are used to test these theories. Export alliances are organizations of the peripheral states which are producers and exporters of a single commodity. Export alliances are organized to control market fluctuation by stabilizing prices and/or regulating production output, and to safeguard the political and economic rights of the producing countries over their natural resources.

It is suggested here that through integrated export policies, less developed countries can counteract the dependency generating

tendencies of the world economy. A historical study of five export alliances, followed by a quantitative analysis of OPEC, support some but not all premises of these theories. This study reveals that participation in OPEC did not lead to economic diversification of its member countries, but increased their remunerative return and helped further their economic growth. The experience of OPEC and some other alliances suggest that export alliance participation can modify the internal impacts of raw material specialization and control external dependency.

The results of this study call for some revisions in the premises of the two models. World-system theory needs to consider the internal conditions of the periphery as one of the parameters accounting for underdevelopment. Neoclassical economics needs to re-evaluate the long run effects of free trade and the international division of labor on the economic structure of Third World countries.

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CHAPTER ONE

INTRODUCTION

This paper in two parts explores the role of export alliances in the world-system and their economic consequences for member countries. The first part consists of three chapters. Chapter One presents a theoretical formulation of the world-system theory and the dependency model. Since the dependency model was formulated as a response to the failure of developmental policies inspired by neoclassical economics, it is proper to present briefly some of the basic theorems of noeclassical economics. It must be emphasized, however, that this research is conducted within the framework of the dependency model.

It needs to be pointed out that Chapter One presents the theoretical formulations of the world-system theory and the dependency model, separately. Though somehow distinct, these two perspectives are constructed based on some of the principles of Marxian political economy and, to a large extent, are similar. Furthermore, the world-system theory is inspired by the dependency model and can be considered as a theoretical reformulation of this model. Thus, while acknowledging some differences, this paper tends to use these two approaches interchangeably.

The world-system model views international inequality as a product of the capitalist world economy. According to this theory, the capitalist world system creates a division of labor among countries that has consequences for their internal structures. The international division of labor generates three structural positions of core, periphery and semi-periphery. While the core enjoys a diversified economy,

relative political autonomy and financial power, the periphery has specialized economies and undifferentiated social structures. The semi-periphery is somewhere between these two poles.

The dependency model maintains that diversified economic production leads to socioeconomic growth, while specialization in production and export of raw materials hampers development. Indeed, this is a widely held hypothesis that relates socioeconomic dependence to raw material specialization. The argument is that production and export of raw materials deter economic diversification and structural differentiation. This type of economy concentrates all national resources around one single activity, consequently stagnating other spheres of production. Furthermore, the trends of international trade work against the primary exporting countries. While the price of commodities constantly fluctuates, the price of manufactured goods tends to increase. In sum, it is argued that raw materials specialization leads to internal underdevelopment and external dependency.

External dependency refers to a state of slow economic growth or superficial development. This process ties the periphery's economy to those of the core to the extent that the type and rate of production, as well as intensity and direction of accumulation in the periphery, fluctuate with the core's economic cycles and trends. This externally conditioned economy transforms the domestic social structure by increasing class inequalities cultivating a dependent ruling elite, distorting the urbanization process, and accelerating a dependent and superficial development.

On the other hand, some economists emphasize the benefits of economic specialization and free international trade. Neoclassical economists, in particular, the advocates of David Ricardo's theory of comparative advantage, argue that countries' diverse natural resources make them relatively most efficient in production of some goods as compared to others. Thus, it is mutually beneficial for countries to specialize in production of goods in which they are relatively most efficient in exchange for those which they are not.

Meanwhile in LDCs, the developmental policies coordinated by international agencies - The World Bank, The United Commision for Latin America - have failed to deliver the promised development. Raw material specialization and free international trade make Third World countries vulnerable to market fluctuations and cycles of the capitalist world economy.

On the other hand, after witnessing the remarkable achievements of the core, many students of underdevelopment were convinced that the way out of dependency is furnished by immediate industrialization and economic diversification. This view urged the leaders of newly independent countries to overhaul their national economy and mobilize all resources for speedy industrialization. Some of the leaders of the Third World countries and their well meaning advisors faced unpredicted difficulties, ranging from lack of capital and trained labor force to impediments created by the core and multinational corporations (MNCs).

The dependency model points out the negative aspects of world market participation for Third World countries. It establishes the stratified structural positions of the countries in the capitalist

world-system, analyzes the dependency generating tendencies of the world economy and raises questions about the merits of primary specialization and free trade for poor countries. It furthermore challenges the evolutionary assumptions of development and argues that underdevelopment is not a prior stage to development, rather its by-product. In short, by utilizing the foundation of Marxian political economy, particularly Lenin's and Bukharin's, it calls on Western social scientists to re-evaluate their views of underdevelopment and social change.

But this critical school that questions the wisdom of the old developmental policies fails to comprehend the predicament of the periphery. This paper suggests that the world-system theory and the dependency model have overlooked the practical aspects of economic survival. Today, less developed countries (LDCs) are conscious of the exploitative tendencies of the international economic order, but the necessity of survival impels them to participate in the world market.

Some of the nationalist leaders of Third World countries have long realized that industrialization is not an overnight process. Total withdrawal from the world-economy - even if desirable - is not plausible. Therefore, while committed to the goals of growth and national development, they have re-evaluated their means and embarked upon improving their positions in the commodity market and securing their autonomy within their borders and in international trade.

One of the means utilized by the periphery to resist the dependency generating trends of the world market is the organization of export alliances (EAs). An export alliance is an organization of the peripheral states which are producers and exporters of a single commo-

dity. EAs are organized to control market fluctuations by stabilizing prices and/or regulating production output to safeguard political and economic rights of the producing countries over their natural resources, to protect members against the core and MNCs, etc. It is suggested here that EAs are devices of dependence control, representing dependency resisting movements in the periphery. These movements are also expressed in other forms, such as The Non-Allied Movement and violent resistance like revolutions and anti-aggression wars.

Primary exporting countries utilize integrated policies to control and manage some of the aspects of external dependency and safeguard their group interests. These organizations and similar attempts are overlooked by the dependency model. Indeed, upon establishing the primary premises of an international class struggle, the dependency model has ignored the ongoing interstate conflict among the core and the periphery.

The Third chapter is devoted to this question. It focuses on the effects of raw material specialization and its implications for foreign dependency. This chapter presents EAs as devices of dependence control. A historical analysis of four alliances among the producers of copper, iron ore, bauxite and bananas, is followed by a theoretical evalution of the historical data.

The Fourth chapter is a historical analysis of OPEC, which is the pioneer in the tradition of export alliances and so far the most successful one. The Organization of Oil Exporting Countries was constituted to safeguard the interests of oil exporting countries against the arbitrary operations of the oil companies. Before the establish-

ment of the organization, these companies had a free hand in production, marketing and pricing of the crude oil. These factors, accompanied by public awareness about the importance of petroleum as an economic as well as political tool, created the need for unified action among these countries. The percipitating factors for the collective action were two price reductions by companies, despite the strong opposition from the exporting governments, leading to the creation of OPEC in August, 1960.

The second half of this paper deals with an empirical study of the role of OPEC in the economic growth of its members. It is hypothesized that OPEC participation promotes economic growth (measured by per capita GNP) of member countries through the following process: OPEC membership increases domestic capital which, in turn, helps the members diversify their economies. Economic diversification, it is proposed, then reduces financial and export dependency, contributing positively to economic growth of the members. It is argued that EA participation can help member countries take part in the work market while resisting dependency generating effects of this participation.

The test of hypotheses is conducted through three techniques of cross-sectional regression, pooled cross-sectional analysis and dynamic models of differential equations. For a sample of 58 countries, concepts are measured in five-year intervals over 20 years from 1955 to 1975. Since most EAs were organized after 1974, this research chose OPEC for a longitudinal analysis of the effects of EA participation on economic growth.

The results of the quantitative analysis support some, but not all, of the hypotheses. It seems that OPEC participation has led to economic growth but through processes somehow different from those outlined in the theory section, processes which lend some credibility to the claims of neoclassical economics.

CHAPTER TWO

THE WORLD-SYSTEM THEORY

After World War II the number of officially independent countries increased drastically. These areas that were characterized before as "colonies" created a classification dilemma for social scientists. They became involved in classifying these countries along the evolutionary continuum experienced by the Western countries. The question of development was answered by reference to evolutionary stages, i.e., to decide the present stage of any given society and to predict its process of future growth.

The idea of vertical evolution was based on the assumption of external autonomy and internal differentiation of each country. It was assumed that economic growth is a function of structural differentiation of each social system independently. Developed countries have passed through the evolutionary stages, and underdeveloped countries must go through the same process to get where the developed countries are today. Therefore, to speed up their evolutionary growth, social scientists suggested capital investment by the developed countries, economic aid and loans from the old metropolis, specialization in primary production as a source of foreign currency, and articulation of modern values in the population.

But the problem with this type of analysis was that the only LDCs that overcame their economic stagnation were those societies that more or less avoided all these paths. Countries like Japan, the U.S.S.R. and the U.S. did not develop because of economic aid and loans or foreign investment, rather because of the lack of them. And the

rest of the LDCs, despite the influx of foreign investment and assistance of the metropolis, remained underdeveloped.

The problem lies in the European centricity of the evolutionary model which makes it unfit for an explanation of social change in LDCs. The fact that developed countries originally started their structural change from different historical positions is overlooked. These countries, as Frank states, "were never underdeveloped, though they may have been undeveloped" (in Bergesen 1980:b). In fact, European feudalism was intrinsically different from the export oriented economy of LDCs. The former was a self sufficient economy mostly outside of the money market, while the latter is the supplier of raw material for the world-market and the consumer of the processed goods and food staples. The social organization and power structure of pre-capitalist Europe were essentially different from the present LDCs'. In contrast to the feudal lord, the elite in Third World countries tend to lead the government toward centralization of authority and increased power of the state (Ramirez, 1981). In sum, the deficiency of evolutionary theories in dealing with Third World countries stems from their underlying assumption that views development as a countinuous process with general and indispensable rules, (cf., Portes, 1976, 1980; Bergesen 1980; Chase-Dunn 1975).

Out of the work of Hobson and Lenin has emerged a theory of underdevelopment that is fundamentally different from modernization and evolutionary theories of economic growth. This theory, known as the World-System Dependency Model, has transfered the question to a higher level of analysis, namely the world-system. These models have "empha-

sized the need to examine these processes as part of a single overarching unit -- the international capitalist economy -- rather than as purely national or regional phenomena" (Portes, 1980:222). In this system development is a dialectical process that constantly creates its antithesis, i.e., underdevelopment. Economic growth in some parts of the system creates stagnation in other areas. Therefore, development is not one stage on the line of evolutionary change that is universal, inevitable and irreversible. Rather it is the consequence of accumulation of the periphery's surplus in a few core countries.

The world-system model is a by-product of the Marxian school of social change. It is a by-product because of its departure from the Marxian idea of a unilinear evolutionary change. In a more direct line it goes back to Hobson's and Lenin's views of imperialism.

Imperialism was introduced into the literature of political economy in 1920 by Hobson, a Victorian liberal and a social reformist. The occurrence of the Boer War and the Spanish-American War before that, convinced him that "the dominant directive motive" for these conflicts "was the demand for markets and for profitable investment by the exporting and financial classes within each imperialist regime," (1938:v). An imperialist system, according to Hobson has these characteristics:

1. It is a consequence of excessive "capitalist production" beyond the absorbing capacity of the democratic demand. This over-production happens in periods of high savings and increased capital investment. The "constant impulse to push for overseas markets" is due to "a chronic tendency to try

to save a proportion of national income than can find a useful expression in new capital" (vii).

2. The oversupply of capital is caused by unequal distribution of national income favoring "profit and rents" against wages. The result is a decline in purchasing power of workers disturbing the balance between production and consumption. Therefore, the slump of trade in the home market impels investors to seek profitable markets among the "lower races."
3. The direct outcome of this constant search for foreign markets is imperialist war that consumes a great portion of "public money" for military equipment. Hobson argues that imperialist wars generate enormous profits by improving the opportunities for foreign investments and acquiring new markets for the British goods while protecting British trade against foreign competition. Furthermore, they create employment for "engineers, missionaries, speculative miners" and increase the number of posts available for "diplomatic and consular services" (48). In sum, " aggressive Imperialism, which costs the taxpayer so dear,...is a source of great gain to the investor who cannot find at home the profitable

use he seeks for his capital, and insists that his Government should help him to profitable and secure investments abroad" (55).

4. The imperialist economic policies are products of close collaboration between certain "well organized business interests" and government and consequently beneficial to the latter. "The weak (and) diffuse interest of the community" is "subordinated to those of certain sectional interests that usurp control of the national resources and use them for their private gain" (46, 48). Among the major beneficiaries of imperialist policies are financiers and bankers who contantly struggle for "profitable markets of investment." Military, mining, transportation and textile industries in collaboration with missionaries constitutes what he calls "an important nucleus of commercial imperialism."

The work of Hobson opens the way for a new perspective on the question of development. It is Lenin who later elaborated Hobson's work as he indicated in the preface to the Russian edition of his book that he had used "Hobson's book with all the care that, in my opinion, that work deserves" (1970:7).

Lenin's major contribution to the question of unequal growth is his elaboration of monopoly capital. He argues that concentration

of capital is a product of free competition because: (1) in its early stages capitalism grants equal access to the sources of raw materials and markets; (2) but those enterprises that have been able to combine different branches of one industry manage to eliminate the competition; (3) at this stage banks provide a large proportion of industries' capital which gives them a growing control over industrial production. The result is "merging or coalescence of banking with industry" that gives rise to "finance capital."

Imperialism or monopoly of finance capital, Lenin argues, has five essential features: the significance of monopolies in capitalist economy, the appearance of "finance capital" out of collaboration of "bank capital with industrial capital," the export of capital exceeding "the export of commodities, the formation of international capitalist monopolies that share the world among themselves," and the geographical division of the world among capitalist powers, (89).

This discrepency between Lenin and Hobson stems from their conflicting philosophical orientation and contradictory methodological tools. Hobson sees imperialism as the least desirable response to the problem of underconsumption in the capitalist countries. It only benefits certain sections of capitalists and increases the threat of "trade unionism." He believes that expansion of the foreign market is due to the greed of some capitalists, and that, as an "economic system" capitalism does not benefit from wars (xv).

For Lenin, on the other hand, imperialism is the consequence of the historical change of capitalism. Monopoly capital that has terminated the competitive capitalism in the core dominates the peripheral

areas for their market and abundant resources. As a consequence, an international division of labor is created that transfers class antagonism from within the developed countries to the international scene among countries. Imperialism, thus, is a structural condition, not the consequence of the "capitalists' malice" (Lenin, 1970).

But despite these discrepencies, the positions of Hobson and Lenin are surprisingly similar. For instance, they both agree that foreign markets and new sources of raw materials are imperative for increasing the margin of profit; that in imperialism export of capital finds a new significance and surpasses the export of commodities by returning higher tribute. They also introduce similar positions concerning the division and re-division of areas of influence by means of wars and the importance of wars for increased productivity and profit. Indeed the coalition between banks and industry and the pressure they exert on government for military adventure are emphasized by both authors.

It is as a result of these shared propositions that the works of Hobson and Lenin manage to present a theoretical postulation of imperialism. Indeed the historical conditions of the early 20th Century had such an impact on their thoughts that they both predicted a similar response to the question of imperialism, namely, socialism though they disagreed on the merits of this solution. In any event the Hobson-Lenin paradigm poses a severe challenge to the neoclassical theories of economics and modernization/structural differentiation models in sociology.

Wallerstein, a recent proponent of world-system theory, criticizes Lenin and Hobson for seeing imperialism as a stage of capitalism not a "cyclical phenomenon" (1980c). He argues that they "have seriously misled us " by presenting imperialism and capitalism as two separate phenomena and thus have contributed to the confusion about the cyclical and secular features of capitalism. He argues that imperialistic attempts like the creation of monopolies, colonization and decolonization are cyclical features of capitalism. The secular variables are trends like "commodification" and "mechanization of factors of production" or increased organization of the "lower strata" against the system (p. -2). Thus, imperialism for Wallerstein "is simply a reference to those activities of stronger states towards weaker states that derive from one of the fundamental antinomies of capitalism: the existence of an economic division of labor that has boundaries far larger than any particular state structure" (p. 21).

The influence of the Hobson-Lenin model of social change did not appear in the mainstream of the social sciences for a long time. Western scientists rejected the idea as altogether polemical and sheer rhetoric, thus, not worthy of scientific consideration. While being absent in the Western thought, the imperialist theory -- especially Lenin's version -- gained momentun in LDCs. Its influence is apparent in the works of people like Frantz Fanon, Mao, Nehru, and Kwame Nkrumah. As a consequence this model not only gained popular acceptance as a thoery of social action, it also dominated the non-Western social sciences as neoclassical economics and modernization theories dominated Western thought.

One of the people who reintroduced the theory of imperialism into the Western social sciences is Paul Baran. He elaborated the hypothesized relationship between the appearance of monopoly capital in advanced countries and economic stagnation in underdeveloped areas. The main factor in advancement of the Western countries is not -- he emphasized -- the superior race or unique cultural traits; rather, it is the extracted surplus from overseas. To illustrate his point, Baran quotes Brook Adams who states that the industrial revolution "began with the year 1760," when "Bengal plunder began to arrive in London." "Prior to 1760...the machinery used for spinning cotton in Lancashire was almost as simple as in India" (1957, 146). To discourage Indian manufacturing, the British rules excluded Indian silk and cotton products from British markets through prohibitive tariffs and taxes while dumping British goods into the Indian market. The purpose of this policy -- Baran indicates -- was to reduce India to a resource exporting country.

Baran elaborates the idea of international specialization and points out its consequences for the peripheral economy: single-track plantation; construction of infrastructure like roads and railways in places inconducive to the integration of the local economy; and strengthening the position of merchant capitalism. Indeed the principle impact of foreign investment is the transformation of the local elite into a comprador bourgeoisie that benefits from trade of exported goods. In detail Baran shows that this group consists of merchants, "native industrial monopolies" and "feudal land owners" collaborating with international capital and, thus, suffocating merchant capitalism

before maturation to industrial capitalism (p. 194). In sum, Baran's contribution to the question of unequal growth is to show how foreign capital changes the socioeconomic structure of the host country.

The World-System

Building on the existing literature on imperialism, Wallerstein has reorganized the theories of economic growth and produced a larger frame of reference. He argues that developement is not a feature of nation-states, rather, it is related to a larger unit, the world-system. This system consists of nation-states, semi-independent business enterprises, ethnic groups, classes and tribes. The component parts interact with each other according to the capitalist rules of exchange, i.e., production for profit.

Wallerstein's contribution is the expansion of the unit of analysis to include the whole world as a social system "that has boundaries, structures, member groups, rules of legitimation, and coherence" (1974a:347). The previous schools of social change, whether evolutionary or modernization, start with the nation-states. It is within these units that they try to explain structural changes and then compare units with each other on various scales of economic growth or value modernization. The modern world-system is a "self-contained" system with internal dynamics of development. The main features of this system to Wallerstein and others are:

1. It is a capitalist system developed in the sixteenth century in which the nation-states are the main actors. The participants in the system produce for profit which is appropriated by private or public ownership. In contrast to the Smithian theory, the economic losses are absorbed by political entities (1974a:348), meaning that the

world market is not free from state intervention. In fact, it operates under the constant pressure of political systems to rearrange surplus distribution for the benefits of some actors.

2. This system creates a super national division of labor among nation-states with consequences for their internal structure and external growth. The stratification of the world economy creates three structural positions in the system; core, periphery and semi-periphery.
   a. The core areas combine a strong and diversified economy with a well intergrated substructure, namely a unified national culture, strong state and advanced technology. They tend to have high productivity in both manufacturing and agriculture, employing a skilled labor force and paying high wages. Their society is organized around complex networks of communication and transportation that connect the integrated local economy to the world market. The core states maintain a monopoly over means of force and play an active role in the distribution of the rewards in the system.

b. The peripheral economy has a dual feature; it consists of a "modern" sector like mines, plantations and assembly lines and a "traditional" sector which reflects the economy of the area before inclusion into the world-system. The modern sector is the product of the capitalist world economy and supplies the world market with raw materials. This sector contains a large tertiary section inflated with underemployed workers. The labor force is semi-skilled or unskilled, earning low wages, which contributes to the skewed income distribution in these areas. The infrastructure in the periphery is externally oriented such that means of communication and transportation function to connect the modern sector of the economy to the world market. Finally, the state machinery in the periphery's is weak "ranging from its nonexistence...to one with a low degree of autonomy" (Wallerstein, 1974a:349).

c. The third position is occupied by the semi-peripheral areas representing the middle ground of the continuum. These areas re-

veal a combination of core and peripheral features in terms of strength of the state, integration of social structure and economic diversification. Wallerstein argues that the semiperipheral position is not a residual category but a structural necessity of the system. Semiperipheral countries, on the one hand, contribute to the image of structural mobility in the system and, on the other hand, prevent polarization of the countries, meaning unification of periphery's against the core areas.

3. This hierarchical division of labor allows the core areas to appropriate some portion of surplus produced in the periphery's. It occurs in the form of unequal exchange in which LDCs have to exchange the product of a large number of their labor hours for a product of a small number of labor hours of rich countries (Emmanuel, 1972). This differentiation in value of labor allows the core areas to appropriate a portion of periphery's surplus, thus promoting underdevelopment in LDCs.
4. Finanlly, the world-system has some structural trends that are either cyclical or secular. The

former refers to the structural constants that are repeated in each period of the system like competition among core areas or pressure for colonization resulting "from the basic contradiction of capitalism" (Wallerstein, 1979:22). The secular trends represent processes in the development of the world-system like "the steady commodification of the factors of production" (Ibid) or "the integration of new populations and territories into the world divison of labor" (Chase-Dunn, 1979:279).

The Dependency Model

The principle assumption of the world-system states that the international division of labor created by the capitalist world economy is detrimental to the economic growth of the periphery . The dependency model takes this assumption one step further, indicating that the domestic consequence of external dependency is not economic stagnation of the periphery, but some form of socioeconomic changes that prevent economic development of the Third World countries. This model not only includes the hierarchical relationship of the world-system but also the effect of this relationship on the socioeconomic structure of LDCs. In other words, the comprehensive framework of the dependency model offers the analytical strength of the world-system plus concrete hypotheses for empirical studies of unequal growth.

The dependency model emerged out of the works of the economists of the United Nations Economic Commission for Latin America (ECLA) such as, H.W. Singer, Raul Prebisch, and Gunnar Myrdal. They noticed that the trends of the international market work against the producers of raw materials. Those countries that supply primary products tend to receive less for their product and pay more for the manufactured goods. As a consequence, LDCs are faced with chronic balance of payment problems that plague their attempts to industrialize.

Dos Santos argues that a country is dependent when its development is "conditioned by the development and expansion of another economy" (1970:236). The "peripherization" process has reduced LDCs to the appendage of the core to the extent that the type and rate of production, as well as intensity and direction of accumulation in the periphery,

fluctuate with cycles and trends of the core's economy. This externally conditioned economy transfers the domestic social structure by increasing class inequalities, cultivating a dependent ruling elite, distorting the urbanization process and accelerating a development that is superficial and dependent.

The principle premise of the dependency model, like the world-system theory, is that the poverty of peripheral nations is not due to their isolation and lack of integration into the international market. Rather, they are poor because they have been closely integrated into the world market. However, the incorporation of peripheries occurs on unfavorable terms in the sense that they are reduced to being exporters of raw materials. Specialization in production and export of resources are viewed by most world-system/dependency theorists as a mechanism that perpetuates underdevelopment. (Baran, 1957; Emmanuel, 1972; Amin, 1977; Wallerstein, 1974a.)

Wallerstein traces the division of labor among countries back to the sixteenth century when the European countries, by extracting surpluses from their overseas adventures, expanded their manufacturing ability. To insure a steady flow of raw materials for their industry, advanced countries, through various means like coercion or regulation, eliminated the local industries and encouraged a single crop agriculture (1974a). The specialization in a cash crop agriculture has adverse effects on the economic growth of LDCs because it concentrates capital and national resources around a single productive activity and accelerates the stagnation of other spheres of economy. For instance, one-crop plantations in the areas that had multiple-product agriculture create acute food shortages requiring food import (Baran, 1957; Evan, 1979). As a conse-

quence the valuable foreign currency, indispensible for acquisition of advanced technology, is devoted to the commodities that once were indigenous products.

Despite its popularity, this long debated hypothesis -- predicting a causal relationship between raw material specialization and underdevelopment -- has inspired few empirical studies. One sociological study conducted by Galtung (1970) reports a positive relationship between export specialization (measured by the UN's trade composition index) and development (measured by GNP per capita and percentage of labor force employed in non-primary sectors). However, Delacroix raises questions about the reliability of the UN's index as a measure of the degree of processing. Moreover, he argues that the trade composition index and percentage of the labor force in non-primary sectors are "two measures of the same internal development variables" (1977:798) and, therefore, create a tautological dilemma because the amount of raw material in a country's export reflects the proportion of labor force employed in the non-primary sector.

Galtung's study is limited to 1967-68, so Delacroix sets out to test this hypothesis for the period of 1955-1970. He argues that the degree of processing of commodities can be measured by "the amount of (social) information invested in" them (1977:158). He uses secondary school enrollment as a measure of general information processing capacity and hypothesizes that specialization in export of raw materials is a "by-product of poverty"; not its cause. Furthermore, he suggests that (a) these countries are over-populated and "primevally poor," and (b) the link between specialization and poverty is internal, not the result

of integration into the world-system (1977:799).

His findings reflect the existence of a causal relationship between export specialization and national poverty. It seems, he suggests, that the picture of a world market divided into the poor and resource producing countries and the rich and manufacturing countries, portrayed by the world-system/dependency theorists, is not totally true. Indeed, there are numberous examples of rich advanced countries that obtain a large portion of their GNP from the sale of raw materials. Delacroix emphasizes the importance of internal processes ignored by the world-system/dependency theories. He mentions the case of OPEC as the example of raw material producing countries that have been able to influence the world market and obtain a favorable bargaining edge while remaining primary exporters. I will return to this point in the following chapters.

A major theme occurring throughout dependency studies is the impact of foreign investment on economic growth of the periphery . It is argued that monopoly capital invested in LDCs appropriates profit and interest and decapitalizes the local economy. When the major means of local production are externally controlled, the priorities of national growth become subordinate to the profit seeking principles of the multinational corporations (MNCs). The MNCs are the dominant force in the international economy today. They maintain a monopoly over a significant portion of the world's capital and financial credits, control the latest technology of production and are the major producers as well as distributors of the world's commodities. Therefore, MNC penetration in the Third World countries constitutes various aspects of dependency such

as "capital technology, organization, international financial flows and foreign trade" (Bronschier and Ballmer-Cao, 1979:488).

Another point emphasized by dependency studies is the impact of foreign loans and aid, bilateral or multilateral, on the economy of Third World countries. Challenging the neoclassical economists' arguments that foreign aid granted to LDCs can furnish them with much needed capital without the exploitative consequences of the private investment, the dependency model argues that conditions associated with loans intensifies the balance of payments deficit (Payer, 1974). In his book, Payer argues that the International Monetary Fund is dominated by "the wishes" of its largest member, the United States of America and he shows how the Fund's aid in Indochina, Brazil and other LDCs sides with American policies. In an attempt to see whether the conditions of foreign loans give impetus to the repressive regimes in Latin America, John Sheehan (1980) examines the relationship between the application of efficiency measures and political repression. His findings reveal a close association between the requirements of international finance and the policies of strong repressive governments.

The increasing articulation of the world-system/dependency theories gave impetus to an array of quantitative studies of unequal growth and change. The major theme of these studies tests the two cardinal propositions of imperialism: (1) penetration of monopoly capital in peripheries retards their economic development by decapitalizing the national economy (Stoneman, 1975; Chase-Dunn, 1975; Bronschier, 1975; Bronschier and Ballmer-Cao, 1979; Evans, 1979; Mahler, 1979; Rubinson, 1979); (2) the connection between the local elite and the core and MNCs

suppresses demands for higher wages (Rubinson, 1976; Chase-Dunn, 1975; Mahler, 1979; Evans, 1979). The notion of a dependent elite and their role in perpherization of their countries is not unique to the world-system/dependency theories; rather it is present in most Marxian studies of underdevelopment, (see Fanon, 1963; Amin, 1972; Baran 1957). It is argued that since the dependent elite owe their power and existence to their alliance with international capital, they suppress the policies aimed at redistribution of national income and allocate most of the national resources to the export sector (Galtung, 1971). Therefore, the link between international capital and the local elite creates a biased income distribution favoring the elite and keeping wages low.

Therefore, in most empirical studies of external dependency the two cardinal independent variables are aid dependence and investment dependence, (Chase-Dunn, 1975; Bronschier and Ballmer-Cao, 1979; Evans, 1979; Mahler, 1979; Rubinson, 1976; Stoneman, 1975; Evan and Timberlake, 1980). Investment dependence refers to the penetration of a country's economy by direct private capital investment. The dependency model views this penetration as a source of political and economic power for the external forces. Aid dependence is the conceptualization of the amount of foreign aid, private and public, a country receives. This variable is also viewed as providing leverage for the aid agencies, international or bilateral, to influence the government that depends on them.

The major dependent variables in the dependency studies are economic development and income inequality. The former is measured by GNP per capita or GDP per capita and the latter is measured by indivi-

dual or household income distribution.

Bronschier et al, (1978), in an overview of a number of dependency studies, find that of the 14 studies reviewed, five deal with the effect of dependency on income inequality and all of them report a positive relationship between the two variables. Eight studies report a negative effect of investment dependence on economic growth, and six studies report a positive relationship. The authors suggest that this difference stems from different measures of investment dependence. There are two measures of foreign capital penetration in dependency studies. One is "flow" that measures the amount of foreign aid and capital coming into a country within a limited time. The other measure is "stock" which refers to the accumulated amount of capital and foreign aid that exists in a country. Most of the studies that have used stock (7 out of 11) as a measure of investment dependence report a negative relationship, while most of the studies that have used flow found a positive relationship. The authors believe that the discrepancy reflects more than a difference in measurement; it represents the short run and the long run consequences of dependency. The positive results indicate that the current influx of foreign aid and capital may contribute to capital formation and stimulation of the local economy in the short run, but in the long run it distorts the local economy by exploiting the national resources, re-orienting economic production and exporting huge profit.

The authors then suggest four hypotheses dealing with geographical variation and level of development of the host countries. Their analysis of the data for a sample of 76 countries indicates that while

there is little variation with the effect of geographical areas, foreign capital penetration has a "significant interaction effect with level of development." In other words, "while the effect of foreign capital is negative within both richer and poorer developing countries, it is significantly more negative in richer than poorer countries" (675).

In another study Evans and Timberlake (1980) argue that foreign investment increases the level of inequality by disturbing the evolution of the labor force structure in the less developed countries. The current process of economic transformation in LDCs demonstrates three interrelated features as follows:

1. Much larger proportions of the labor force are employed in the service or tertiary sector than were employed in currently developed countries at similar levels of industrial growth.
2. The growth of industry is accompanied by an influx of foreign capital and by increasing dependence on foreign technology.
3. Levels of inequality are substantially in excess of those found in developed countries (532).

Evans and Timberlake argue that a high level of inequality, rapidly growing tertiary sector and high level of investment dependence are closely related. Capital investment by foreign sources re-orient the economic production of the host country and introduces capital intensive technology. At the same time, underutilization of labor in agriculture, due to the introduction of modern technology or traditional land tenure, exacerbates the rural exodus. These rural migrants cannot find jobs in the highly capital intensive industries of urban areas. Therefore, pushed by the stagnant agricultural sector and attracted by a desire for consumer goods which is generated by the multinationals, the new migrants are absorbed into the terieary sector of the urban economy.

The effect of investment dependence on inequality is mostly channelled through the rapid growth of the tertiary sector. On the one hand, income distribution within this sector of the economy reflects severe inequality, and on the other hand the mass of underemployed workers in the tertiary sector functions as a "reserve army of labor" that reduces the bargaining power of workers in the secondary sector and consequently contributes to increased inequality.

The result of their analysis for a sample of 57 countries with almost 50 LDCs demonstrates the predicted negative effect of investment dependence on inequality in poor countries. Interestingly enough, this relationship holds up well when population growth is introduced into the equation. They also found significant support for their main hypothesis that predicts a positive relationship between increase in foreign investment and growth of the tertiary sector, on the one hand, and the growth of tertiary and increase in overall level of inequality, on the other hand. Thus, the authors argue that the observed relationship between investment dependence and inequality is not due to the growth of the modern sector; "the relationship is a function of the kind of modern sector that is created" (546).

Another intervening variable influencing the negative imapct of economic dependence on economic development is the strength of the state. Wallerstein has shown (1974a) that strong states played crucial roles in the development of core areas. Moreover, in countries like Japan and the U.S.S.R. states were actively involved in the protection of the national economy and in minimizing the risks involved in participation in the world market. Thus, Rubinson argues that "one of the ways

that dependence effects economic growth is through its effect on the strength of the state" (1979:208). His study for the period of 1955-1970 shows that export partner concentration (the degree to which exports are concentrated with one country partner) and external public debt -- measures of dependency -- have significant negative effects on the government revenue. The second part of his hypothesis is also supported indicating that state strength (measured by government revenue) has a positive impact on economic growth (measured by GNP). The results yield larger correlation coefficients for poorer countries compared with richer countries. Therefore, he concludes that "the effect of government revenue (is) an important mechanism in accounting for the negative relationship between dependence and gross national product between 1950 and 1970, but this mechanism (is) more important in poorer than richer countries" (p. 220).

Economic development is not just the cumulative growth in the GNP per capita of a country. Rather, developmental processes cause diffuse changes in all aspects of social structure. Mahler (1980), in a synchronic study, examines the effect of external dependency on several aspects of the internal structures of the periphery such as "equity of income distribution, level of general social welfare..., level of unemployment, progressivity of the national taxation system, pervasiveness of mechanisms of political coercion and rate of economic growth" (p. 4).

The results show a strong and positive relationship between various indicators of dependency and social marginality and underutilization of the labor force. A progressive increase in a composite

measure of dependency is closely associated with a progressive increase in the rate of unemployment. He also observes that the rate of dependency adversely affects a "composite indicator of social welfare and policy in LDCs" (94). The coercive apparatus in peripheries absorbs a significant portion of the GNP, and Mahler finds that the amount of the labor force and expenditure invested in the military is positively associated with the indicators of external dependency. As far as regional subgrouping is concerned, the data show common patterns of external dependence for geographical regions, especially for Africa and Latin America which, he argues, are "based primarily upon geographical proximity, colonial heritage and common patterns of export product composition" (p. 118). The "feudal interaction" proposition is also confirmed implying existence of "strong networks linking dominant LDCs which tend to interact intensively with them and only to a limited degree with alternative DC partners or other LDCs" (p. 139).

Finally, the concept of "dependent development" has received considerable attention in analytical studies of unequal growth, (Evans, 1979; Evans and Timberlake, 1980; Cordoso, 1973; Amin, 1976). It is argued that, in contrast to the predictions of early theorists of imperialism, monopoly capital is not a source of economic stagnation of the periphery. Rather it promotes an asymmetrical development that is originated by foreign capital and orchestrated by external interests. Evans refers to dependent development as representing cases "where capital accumulation and diversified industrialization of a more than superficial sort are not only occurring in a peripheral country but are dominating the transformation of its economy and social structure" (1979:32).

Wallerstein believes that dependent development is not an opportunity equally granted to all peripheral areas. Rather, it is only semiperipheral areas that can rise at the expense of others in the downturn trends of capitalist world economy (1980:73).

In summary, the results of empirical studies have shown that:

1. Foreign capital and aid increase income inequality within countries while decreasing their rate of economic growth. The level of development of the host country has a confounding effect on this relationship.
2. The effect of investment dependence on income inequality is channeled through the rapid growth of the tertiary sector.
3. There is little empirical evidence for the relationship between raw material specialization and underdevelopment while there is positive association between the former and initial poverty.
4. External dependency contributes to the marginalization of labor force, political coercion and deterioration of social welfare.
5. Finally, the impact of dependence on economic growth is conditioned by the effect of the state's strength.

To conclude, the world-system/dependency model presents an articulated theoretical framework supported by empirical evidence and can be a valuable analytical took for the study of development. However, like any other scientific theory, it requires constant modification and reorganization.

Neoclassical Economics

The dependency model was developed as a response to the developmental policies based on the principles of free trade and some of the assumptions of neoclassical economics. Thus it is proper at this point to present some of the major assumptions of this model.

Neoclassical economics traces its origin to the works of David Ricardo, John S. Mills and Alfred Marshall, leading later on to Keynesian economics (Lindbert and Kindleberger, 1982, Samuleson, 1973). In the sphere of international trade and the world economy, this school is constructed on the foundation of theory of comparative advantage and free international trade. This theory or Ricardo's "law of comparative advantage" as it is sometimes called, is based on the labor theory of value which considers labor the only factor of production. The theory of comparative advantage states that it is mutually beneficial for countries to specialize in those products in which they are most efficient and exchange them for other countries' products. The key point here is "relative efficiency": as long as there are relative opportunity costs - costs in terms of products forsaken in production of goods among countries each country has a comparative advantage in some goods and a comparative disadvantage in others (Caves and Jones, 1981; Reynolds, 1969; Samuleson, 1973). There are three underlying theorems to be considered in this theory:

> 1- There is a territorial division of labor, implying that countries are endowed with diverse natural resources and social features making them more efficient in production of some goods and less efficient in others. In other

words, there are differences among countries in terms of relative opportunity costs of some products versus others. While some countries have diverse natural resources and an unskilled labor force, there are others with capital and advanced technology but short on raw materials. And furthermore, a country could enjoy a high level of productive factors in absolute term but it may have a relative disadvantage in some factors compared to other countries. Thus the diversity of productive factors among countries sets the foundation for economic specialization and the international division of labor (Reynolds, 1969; Samuleson, 1973; Caves and Jones, 1981).

2- There is a comparative advantage in the sense that it pays for a country to produce only those goods in which it is efficient and import goods in which it is not. Comparative advantage depends on relative efficiencies of countries. Ricardo used the British textile and Portuguese wine industries to illustrate this principle. This can be demonstrated by the following example of two countries C and D and two products A and B, where A can be primary and B secondary products. If agricultural land and labor are abundant in country C but capital is considered a scarce resource, then it has the most relative efficiency in product A as compared to product B. In contrast, in country D capital

is plentiful compared to labor and land, so it has the most relative efficiency in product B. If country D must give up three units of product A for one unit of product B and country D must foresake 2 units of product B for 1 unit of product A, then both countries would benefit if country C specilizes in product A and country D concentrates on production of B, (Reynolds, 1969). This leads us to the third theorem of the theory of comparative advantage:

3- Free international trade is mutually beneficial when countries specialize in production of goods in which they are most efficient. Thus, the theory of comparative advantage states the limits within which exchange between two countries is mutually beneficial. Referring to the above example, country C could then exchange 1 unit of product A for about 2.5 units of product B and country D could receive about half a unit of product A for 1 unit of product B. Before free exchange, country C could receive only 2 units of product B and country D could receive only 1/3 units of product A. As a result of free trade, returns on factors of production will rise in both countries. Specialization and international trade will raise the world supply of both goods and each country's consumption capacity. In other words,

> when countries specialize in production of those goods in which they have a comparative advantage and exchange them for other goods through free trade, the result is a larger output at the world level than could have been obtained through autarky policies (c.f., Raynolds, 1969; Lindert and Kindleberger, 1982; Samuelson, 1973).

The theory of comparative advantage, however, has consistently been revised. One such revision was made by two Swedish economists, Eli Heckscher and Bertil Ohlin at the turn of the century. In contrast to those theories that reduce all factors of production to labor equivalent, their model considers all elements of productive factors. Furthermore, they maintain that international trade balances out the price of productive factors by eliminating the differences in the levels of wages, rents and interests, (Caves and Jones, 1981).

Referring to the example of countries C and D, D has the relative advantage in capital intensive products, where, C, on the other hand, is more efficient in labor intensive commodities. If an unrestricted trade is conducted between two countries, country C will export its labor-intensive product to D. As a consequence, its export sector will expand; the import of capital-intensive goods from country D, where they are relatively cheaper, will increase; and country C's capital-intensive sector will start diminishing. The exporting sector in C demands more labor and little capital leading to a higher wage level and lower interest rate. The reverse process will happen in country D, so that for each factor of production, the rate of return

in the two countries becomes almost equal. Thus, it follows that free international trade functions as a vehicle of price equilibrium (Reynolds, 1969).

In the next chapter, I will address the problem of raw material specialization and two of the solutions envisioned by some of the exporting countries. A discussion of the causal relationship between primary specialization and underdevelopment is followed by a historical analysis of four export alliances. Finally, the theoretical implications of the alliances and their role in the world-system are discussed.

CHAPTER THREE

EXPORT ALLIANCES IN THE WORLD-SYSTEM

Introduction: The present chapter deals with the question of raw material specialization and its impact on the economic development of the Third World countries. The second chapter introduced this issue and presented findings of some empirical studies. In the present chapter I will discuss why raw material specialization is considered to be detrimental to the economic growth of LDCs, and I will review a solution sought by some of the peripheral countries, namely export alliance (EA). Here, I will present a brief history of the performance and structure of four alliances among the producers of copper, bauxite, iron ore and bananas. In order to understand the position of LDCs in the international commodity market, it is also necessary to introduce another strategy which has been employed by LDCs, namely the international commodity agreements (ICAs) and their function for both producers and consumers. Finally, I will explore the theoretical implications of EAs for the world-system and try to provide answers to questions concerning the role of these alliances and their consequences for member nations.

Raw Material Specialization: A Problem

As noted in the previous chapter, the theory of comparative advantage formulated by Ricardo and Smith argues that international specialization leads to more output and higher returns for all concerned parties. Instead of wasting their resources on economic activities for which they are not suited, countries should specialize in the type of products for which they have abundant natural resources or for which they have mastered production techniques. As a consequence, a diversi-

fied international economy emerges in which free international trade functions to regulate the exchange process and to distribute rewards. The case of British cotton for Portuguese wine used by Ricardo is a well known example of the advantages of international specialization.

To this theory, various branches of Marxian social science, including the world-system theory, answer that, on the contrary, raw material specialization promotes an "unequal exchange" in which raw material producers have to exchange the product of a large number of hours of labor for a product containing less hours of labor (Emmanuel, 1972). The comparative cost of international trade works in favor of some countries and to the detriment of the majority.

The causal processes linking raw material specialization to the national poverty of the underdeveloped countries, it is argued, work through the following channels:

1. The supply and demand of primary products in the world market are inelastic, i.e., do not vary with price fluctuation. The inelasticity of demand is due to (a) "necessity of the commodity in the finished products," (b) difficulty or lack of substitution, (c) and the share of the commodity in the cost of the finished product (Law, 1975:4). The variation in supply is either due to natural factors, like weather and periodical agricultural lags in production of some crops such as coffee and tea, or to relations of production characteristic of LDCs, like types of land tenure, farm size and lack of capital.

2. Following from low elasticity of supply and demand is extreme price fluctuation of the primary commodities. The consequence of these cycles for the exporting economy is periodic booms and busts that effect capital investment and long term planning.
3. The ratio of the commodity to the total national output is high. Therefore, "the share of the national income generated by exports normally exceeds the shares generated by private domestic investment or governmental expenditure" (Meyer and Baldwin in Macbean, 1966:26). So, any change in the total value of export has a direct impact on the local economy, by stimulating "inflationary pressure," redistributing the national income and creating social as well as political instability (Macbean, 27).
4. Export fluctuation, Macbean argues, negatively effects capital accumulation for optimum output. This uncertainty on the one hand "increases the difficulty of estimating the expected return on investment" and on the other hand, due to the problems of foreign exchange, impairs their "ability to import any necessary capital goods or raw materials at a given time" (28).

5. The ratio of national resources disproportionately allocated to the production of primary goods results in depression of other local industries. It is argued that when the major part of arable land in an LDC is devoted to the cultivation of a single cash crop, other agricultural activities will gradually be abandoned. Soon, the government is forced to import food staples for consumption, staples in which the country used to be self-sufficient (Baran, 1957; Evans, 1979).
6. Finally, as a consequence of the above factors, raw materials specialization positively effects increased dependency. Export fluctuation, price instability and deterioration of local industries stimulate the demand for imported goods. Like a vicious circle, increased imports burden the national reserve forcing the state to push for higher concentration around the main export commodities and less diversification.

The empirical evidence linking these two variables is spotty and inconclusive. In the previous chapter, I summarized Gultans's and Rubinson's studies -- one reporting confirming evidence and the other negative results. Despite the contradictory findings, the assumption remains a prima facie, not only among the leaders of LDCs but also in the orientation of the different schools of social change and development

that raw material specialization, if not a principle cause of underdevelopment, leads to the vulnerability of the peripheral countries in the world market.

Export Alliances in the Periphery: A Response

> "We must own, and control the exploitation of our resources. We have seen in Guyana and in other underdeveloped countries, foreign-owned extractive industries prosper while the native population remained poor and destitute." (Broadcast address by Prime Minister L.F.S. Burnhan of Guyana quoted in Meier, 1974:179).

> "If developing countries exporting minerals and other raw materials are faced in their commercial dealings with big industrial powers and their giant corporations possessing vast know-how, economic resources and bargaining force, it is natural to expect them to get together with a view to exchanging information for their mutual benefit, to form producers' associations of the OPEC-CIPEC (copper producing countries) type...and ultimately to agree on an integrated international commodity policy or a common approach vis-a-vis the developed industrial world and their business agents." (OPEC Bullentin, 1970, No. 3:14).

After World War II the newly independent countries became increasingly aware of their position in the world-system and have made attempts to improve that position. Today peripheral states almost universally subscribe to the goals of national development accompanied by internal as well as external sovereignty. Toward these goals the urgency for increased return on their exports is becoming one of the major priorities of the states.

Governments of LDCs have followed different paths to improve their bargaining positions in the world market. These paths vary according to the type of commodities, militancy of the government, existing concessions with MCDs, the international situation and interference of the core states on behalf of the MNCs. The solutions so far sought

range from nationalization of the industry, bilateral or multilateral negotiation with the importing countries -- international commodity agreements (ICSs) -- and the establishment of the export alliances among the producers. Here, I am generally concerned with the role of EAs in the world-system. But first it is imperative to deal with the question of ICAs and their success as far as the objectives of resource producing countries of the Third World are concerned. The uniqueness of export alliances beomes apparent by first examining international commodity agreements.

International Commodity Agreements

ICAs were in existence among the colonial powers before the First World War and were basically used for price stabilization and production control. These agreements were perceived as short term measures that would ease market disequilibrium without interfering with the operation of the free market. As a matter of fact, one of the advocates of the integrated programs for international commodity control was Lord J.M. Keynes. He argued for the establishment of a buffer stock to stabilize prices by buying or selling stocks when the price fell or rose beyond a specific (10 percent) level (cf., Brown, 1980; Reynolds, 1978).

The extreme price fluctuation and market instability of raw materials during World War II revitalized the idea of integrated programs for commodity control. However, this time, the newly independent countries of Asia, Africa and Latin America were enthusiastic advocates of ICAs. The developed countries, being the original designers of ICAs and still maintaining some of their commodity agreements (like wheat), have generally discouraged the poor nations from these attempts (cf., Brown,

1980; Rangarajan, 1978; Nappi, 1979; Ady, 1980). But the economic boom of the Korean War brought LDCs nothing but declining commodity prices and high inflation rates. While the price of raw materials suffered a steady decline, the price of manufactured products rose constantly, creating economic instability and balance of payments problems for LDCs. The decade of 1950-60, created a feeling of frustration and powerlessness among the Third World countries. They had little voice in the arrangement of the international monetary system; their exported products faced numerous barriers of tariffs and quotas; and their initiatives for economic sovereignty were met with hostility and threats of force. Thus, some form of international cooperation to counterbalance the market fluctuation of primary commodities seemed necessary.

In a meeting of the United Nations Conference on Trade and Development (UNCTD) in Havana (1947-48), the participants drafted a charter for international economic behavior concerning various apsects of international trade. The charter proposed creation of an International Trade Organization to supervise the enforcement of the charter. Due to the strong opposition of developed countries (DCs), the Havana charter was never ratified but its Chapter Six, dealing with ICAs was adopted by the United Nations Economic and Social Council in March of 1947 (Rothstein, 1979). This charter views the ICAs as exceptional arrangements to the rules of free market and feasible only under specific conditions. According to the charter, an international agreement may be arranged by producers and consumers of a primary commodity when (a) a "burdensome surplus...would cause serious hardship to the producers, of whom a substantial proportion must be small producers" and (b)

"where widespread unemployment or underemployment involving undue hardship to the workers has developed" (Row, 1965:159-60). In these agreements exporters must cooperate with importers, and both parties have equal voting rights in the commodity council. This is in contrast to the structure of export alliances to be discussed later. Among the many ICAs, the sugar and coffee agreements are two agreements for which exporters are Third World countries and principle importers are DCs (Rangarajan, 1978:75).

Sugar: The sugar market from World War II until the Korean War was characterized by cycles of inflated prices and overproduction. In 1950, due to the persuasion of the exporting countries, the first sugar agreement for a period of five years was signed. This agreement established floor and ceiling prices, stabilized prices, and assigned export quotas to the producing countries. This agreement and the next one, from 1958-64, included a provision for limiting consumers' access to non-members' products at a lower price.

The occurrence of the Cuban Revolution had a great impact on the enactment of the second sugar agreement. The U.S. cut its Cuban quotas and stopped importing any Cuban products. Cuba asked the Council to channel the lost U.S. quotas to the socialist countries. This conflict in the council between a major exporter and a main importer ended the second agreement in 1960. Following the break of the second agreement there were talks leading to the third agreement (1968-70) and fourth agreement (1977-82) (Rowe, 1965; Law, 1974).

The objectives of these agreements, especially the second one, closely resemble the Havan charter advocating increased remuneration of

the Third World exporting countries and ensuring producers a reasonable income. But the actual achievements of the international sugar agreements -- especially as far as the goals of LDCs are concerned -- are open to discussion. For instance, Law (1974:51) finds that price fluctuation was greater during the twelve years of control than the eleven years of non-control. The American policy and interests of American corporations have had a great impact on the success of sugar agreements. The first agreement was characterized by exclusive quotas for the U.S. mainly from Cuba and the Philippines who "were tied to the internal (U.S.) price for a value of transactions which was determined unilaterally by that country (U.S.)" (Brown, 1980:24). Despite the wishes of the exporting countries and their numerous efforts to stabilize the price and obtain a steady export return, the sugar market remained subject to U.S. policies in Latin America and Asia, (Brown, 1980; Law, 1974).

Coffee: The history of the coffee market is shaped on the one hand by the conflict between the Third World producing countries and the developed consuming countries, and on the other hand by conflict among the old and new producers. During the 1950's, the declining coffee price and disequilibrium in the market created economic hardship for the coffee producing countries of Latin America. Meanwhile, the new coffee producers of Africa, despite declining prices and to the detriment of the old producers of Latin America, were increasing their production. For a long time the U.S. had emphatically rejected any suggestion for participating in a coffee agreement. (This position was specifically stated by its ambassador to the Inter-America Economic and Social Commission.) But the success of the Cuban Revolution alarmed

the U.S. government which believed that another socialist revolution in the area would be a serious threat to the U.S. interest (cf., Brown, 1980; Rangarajan, 1978:259). As a consequence, with the initiative of the U.S., a study group was organized to deal with the question of export quotas. Following this study group two agreements were signed. The participants were exclusively the exporting countries including Britain and France representing their colonies.

The continuing price decline called for a special study group organized by the U.N. to address the problems of the world coffee market. In 1963 the first International Coffee Agreement, with 36 exporting countries and 22 importing countries and 13 observing nations, was signed. The goals of this agreement were stabilizing prices, creating a balance between the world supply and demand, securing a return to the exporting countries, and contributing to the development of the member nations. In order to control the balance of supply and demand and to achieve other objectives of the agreement, a system of export allotment based on quotas was established. The importing countries were prohibited from purchasing non-members' product at a lower price. Following the first agreement, two more were signed. The last agreement, signed in 1975 is due for negotiation in 1982 (Brown, 1980; Rangarajan, 1978).

Despite attempts by producers, the coffee market is plagued by price fluctuation and disequilibrium between supply and demand. Numerous factors, such as rain and frost in Latin America, especially in Brazil, reduced the low-cost, high-yield product of this area. The conflict among the exporting countries over quota allotment reduced their bargaining power. The objective of the importing countries in all nego-

tiations was to secure large export quotas at low prices, but "not so low as to encourage socialism," and exporters sought "a tight coffee market (low production), and high individual quotas" (Brown, 1980:27; cf., Rowe, 1965).

Evaluation: The history of international commodity trade is marked by attempts of one sort or another to control the market instability and to secure a predictable process of supply and demand. Of the number of ICAs tried, the existing agreements deal with wheat, sugar, tin, tea, sisal, olive oil and coca.

The principle objectives of LDCs from the ICAs are increased return on their export, coordination among the producers, a secure demand for their commodity and finally, as Law states, "out-right redistribution of international income" (1975:76). To judge the success of ICAs, as far as Third World countries are concerned, depends on the type of information and conceptual scheme used by the researcher. For instance, Law believes that ICAs "have been unfair to consumbers" and "in some cases have helped to transfer income" at the expense of world efficiency (1975:85). He also finds that sugar and coffee markets faced more fluctuation during the control years than the non-control years. Brown believes that internal policies have had a greater impact on agreements than economic considerations, but if endurance is the criterion of success, some agreements have been renewed three or four times (1980). Nappi believes that inclusion of importing countries in the agreements "has not always been to the benefit of the final consumers," and he sees "little future use of international agreements" (1979:180, 182). Mikdashi argues that, given the present conditions of LDCs in the world

market, they need "the support of the major importer countries" provided by ICAs (1976:136). Nappi argues to the contrary.

In fact, the question of success of ICAs remains a puzzling issue stemming from the contradictory goals of the participants. In every agreement there are two conflicting groups making opposing demands. Where the consumers -- usually DCs -- seek low prices and high production, the exporting countries -- usually LDCs -- look for increased price and adjusted production. However, there is little disagreement about the effect of ICAs on increased prices of raw material. But as far as other areas are concerned, the question is open to further research.

Alliance Among the Exporting Countries

In the world market the primary exporting countries are competing with each other and are unorganized while the importing countries are organized and united into establishments like the European Economic Community, Organization for European Economic Cooperation or Organization for Economic Cooperation and Development. During the early years of the 1970's, being disenchanted with the ICAs and witnessing the success of OPEC, the exporting countries of the Third World were spurred to seek cooperation instead of competition among themselves.

The next decade witnessed the creation of several EAs by peripheral and semi-peripheral countries. These organizations share some commong features that set them apart from other producer organizations. They are (1) based on intergovernmental agreements, and the participants are governments; (2) they attempt to regulate price and/or production of a single raw material and (3) the majority of their members are peri-

pheral countries. In economic literature EAs are often treated as cartels. There are, of course, similarities between them; they both have an oligopoly of one commodity and plan to increase their return and/or control market fluctuation. But a major difference between them is that a cartel can be (and often is) organized by private interests, while an EA is founded by Third World countries and its members are peripheral states. The first EA to set a precedent for peripheral countries was the Organization of Petroleum Exporting Countries, and, interestingly, the first Secretary-General of the Organization confirmed the uniqueness of these arrangements and indicated that people involved in preliminary discussions of OPEC "did not have an organizational precedent to copy" (Mikdashi, 1972:97).

Therefore, given these distinct features, it seems that alliances among the resource-exporting peripheries require a seperate treatment and analysis pertaining to these types of international cooperative efforts. The following is a comparative analysis of these attempts among three groups of mineral exporting countries (bauxite, copper, and iron ore) and one group of food exporting countries (bananas).

CIPEC: The Intergovernmental Council of Copper Exporting Countries (CIPEC) was founded by the four exporting countries of Chile, Peru, Zaire and Zambia in June, 1967, in Lusaka. These countries represented 35 percent of the world copper mine capacity and 65 percent of the world export (Mikdashi, 1976). Copper is one of the mineral resources that is found in both developed and underdeveloped countries equally. But about 60 percent of the world market is supplied by Third World countries (Rangarajan, 1978:74).

Article 2 of CIPEC's charter specifies the goals of the organization: to foster the "continuous growth of real earnings from copper export," to coordinate decisions, provide and obtain information "on the production and marketing" and "in general, to increase resources for the economic and social development of producer countries bearing in mind the interest of the consumers" (Mikdashi, 1976:83).

The organization of CIPEC consists of the Conference of Ministers, the Governing Board, the Copper Information Bureau and the Executive Committee. The highest authority is the Conference of Ministers which meets every two years to discuss policies of "major importance" for the organization (Mikdashi, 1976; Nappi, 1979). After the establishment, Indonesia joined as a member and Australia, Mauritania and Papua, New Guinea joined as associate members of the organization.

After CIPEC was organized, weary of the MNCs' influence and wanting to increase their control over the production and export of copper, the participant countries nationalized some of the oeprations of MNCs in their boundaries. Zaire had already done so and in 1966 had nationalized the subsidiary of a Belgian company. Zambia increased its share of American, British and South African companies in 1970. Chile followed their path and between 1967-72, nationalized the subsidiaries of American corporations, but Peru only nationalized the smallest foreign company in its territory (Nappi, 1979; Brown, 1980). Among other achievements of the CIPEC was the ten percent export cut of 1974 which increased the price of copper in the London market from 78.8¢ to 90.4¢ per pound. In 1974 CIPEC members prevented Japan, a major importing country, from dumping its inventory stocks into the London Metal Ex-

change market. The major show of solidarity came in 1972-73 when the U.S. copper companies -- especially Kennecott whose mines were nationalized in Chile -- sought an embargo against Chilean copper in the European market. The other CIPEC members "agreed not to replace copper on the world market where Chilean copper is seized" and also agreed to the establishment of a "permanent mechanism of protection and solidarity in the event of economic or commercial aggression against any of the organization's member countries" (Mikdashi, 1976:88).

However, CIPEC, despite all its efforts, remained a prey of the MNCs, and when the socialist government of Chile was overthrown by a government friendly to the transnational corporations CIPEC lost most of its power. In 1976, at Chilean insistence, the organization abandoned the EA format and adopted a proposal for participation of importing countries (Brown, 1980).

The ineffectiveness and consequent failure of CIPEC as an organization of exporting countries pertain to the geographical distribution of the copper reserves and the nature of products in the world market. The following factors, it is argued, have hampered the effectiveness of the organization:

1. CIPEC represented only 35 percent of the world resources. The principle copper producers are the U.S., the U.S.S.R., Chile, Canada, Zambia and Zaire. The major consumers, the U.S. and the U.S.S.R., are practically self-sufficient. It is estimated that the existing resources of the world contain an inventory of 480 million tons of copper, of which CIPEC countries have only a small share. This lack of monopoly over the copper resources made CIPEC vulnerable to the price cut

overproduction of other countries like Iran, the Phillippines, South Africa, Canada and Ecuador (Nappi, 1979; Hojman, 1980).

2. The heterogeneity and geographical distance among the members also had an impact on the lack of support for a uniform strategy. This conflict increased after the change in the Chilean government to the extent that in 1977 this country refused to participate in talks for cut-backs, and only Zambia, Zaire and Peru decided to cut back production (Brown, 1980; Nappi, 1979).

3. The importing countries' access to the secondary copper and substitute products like aluminum and plastic has also threatened the exporting countries' position in the world market. In fact, the replacement of copper by aluminum for composite line and electric wiring, and by plastic in construction and transportation has drastically reduced copper consumption in the world (Reynolds, 1978).

4. Finally, the U.S. pressure to keep the price of copper metal (but not those of fabricated copper products) at artificially low levels has been effective in undermining CIPEC's attempt to increase the export earning of its members. "Over the long run the United States Government has exercised far greater control over the price of copper (than the governments of producer countries like Chile), partly through tariffs, partly through direct price and production controls over stimuli, and partly through the operation of a strategic stockpile of copper" (Brunwald in Mikdashi, 1976:92).

International Bauxite Association: Bauxite is an ore that is used for extraction of alumina and aluminum. About 80 percent of bauxite extraction occurs in LDCs, but their aluminum production is about 5

percent. In other words, local processing of bauxite into aluminum is very insignificant in the Third World countries. The bauxite industry is concentrated in a few transnational companies which are reluctant to commit their capital in LDCs. This factor deprived the exporting countries of the profit of aluminum transaction in the world market. For instance, in 1974, one ton of Jamaican bauxite was worth about $2.50 in the ground, but the same ton of bauxite was sold for about $200 as aluminum ingot and for still more as a fabricated sheet or plate (Clarfield in Nappi, 1979). Given the simple processing method, the exporting countries demanded participation in the transformation process and consequently the profit. But the negotiation between individual countries and the MNCs proved ineffective. Therefore, in 1973, under the initiative of Jamaica and Guyana, the bauxite producing countries launched the creation of an export alliance (Nappi, 1979).

The International Bauxite Association (IBA) was founded in 1974 by Jamaica, Guyana, Guinea, Australia, Sierra Leone, Surniam and Yugoslavia. A few months later they were joined by the Dominican Republic, Haiti and Indonesia as members. India, Greece and Trinidad-Tobago were accepted as official observers. Altogether, IBA's members represent about 77 percent of the world production.

The objectives of IBA are to secure members' national ownership of their resources; guarantee their right to exploitation, transportation and marketing of bauxite; promote dialogue between members and the MNCs; provide information and protect members from the conspiracy of large corporations (Mikdashi, 1976; Nappi, 1979). The administrative arrangement consists of a council of ministers, an executive board and a secretariat.

IBA did not articulate a uniform price policy, but the members acknowledged the need for a floor price. Therefore, the price and tax increase was left to the initiative of each individual country. In the same year, Jamaica raised its taxes on raw ore and processed aluminum from $25 million to $200 million. Following Jamaica's example, the government of Surinam increased its revenue by 340 percent by means of a 6 percent retroactive tax on bauxite production. She was later followed by Guyana, Haiti, the Dominican Republic and to a lesser extent Australia. Among the achievements of IBA were also an announced agreement on a price floor of $24 per ton of bauxite shipped to the North American market. Since the establishment of the organization its members have been able to increase their control over production of raw ore and aluminum. In 1971 the "six giant" companies of bauxite-aluminum (Alcan, Alcoa, Reynolds, Pechiney-Ugine-Kuhlman, Kaiser and Alusuisse) controlled about 57.3 percent of the world bauxite production and 70 percent of the aluminum of the world. By 1976 this control had declined to 48 and 58 percent, respectively, giving exporting countries increased control over their mineral resources (Nappi, 1979; Mikdashi, 1976).

In sum, the establishment of IBA contributed to the following successes for the members:

> increase bauxite price and government receipts; acceleration of the installation on domestic market of high value added operations such as the transformation of ore into alumina,..., an increasing percentage of control over alumina production capacity; and the development of transportation for bauxite and aluminum (Nappi, 1979:139).

Iron Ore and AIEC: Iron ore is one of the raw materials that exists in abundant quantities in most areas of the world. Consequently,

before the Second World War its exchange in the international trade amounted to less than 15 percent of the world production. The military expenditure during World War II and economic boom following the war changed this picture altogether. The declining European resources could not keep up with increasing demand stimulated by reconstruction of the European economy. During the next two decades, from 1950 to 1974, the international trade of iron ore rose from 17 percent to 55 percent of the world production (Nappi, 1979).

In spite of increased demand and production, the price of raw ore did not change, while the manufactured products using cheap ore skyrocketed. Given the continuous fall in real price of iron ore, some of the exporting countries, mainly LDCs, endeavored to create a forum for cooperation among producing countries and possibly policy coordination in the production and marketing of iron ore. The first initiative, undertaken by Venezuela in 1968, did not produce the objectives of the participants for the establishment of an Association of Iron Ore Exporting Countries (AIEC). The main problem was that the three major exporting countries of Canada, Australia and Brazil were opposed to a unilateral agreement among the producers and advocated the participation of importing countries (Nappi, 1979; Hallwood, 1979).

Finally, in 1974 a proposal prepared by India, Algeria and Venezuela was accepted by ten countries (Algeria, India, Australia, Chile, Mauritania, Peru, Sierra Leone, Sweden, Tunisia and Venezuela). This new proposal included consultation with importing countries about the expansion of their steel mill installation and the price of iron ore.

The objectives of AIEC closely resemble the charter of other EAs by advocating "close cooperation among member countries," "fair and remunerative returns," "economic and social development of the member countries," and "exchange of information" among the participants (Nappi, 1979:148). But the organization's achievements in terms of price increase or prevention of price fluctuation have been minimal. The reason for its ineffectiveness is that the draft of its charter specifically rejected the organization's power to impose a uniform price system or export quotas. Furthermore, the variety of ores with different content defies a uniform price system by all exporting countries. The fact that the major ore exporters are developed countries like Canada and Australia who are concerned about the consequences for their DC counterparts, and Brazil's refusal to participate, have weakened the organization (Brown, 1980; Rangarajan, 1978).

The Union of Banana Exporting Countries: Bananas, a tropical fruit, are grown mostly in Central American countries, some of which depend on its export as the major source of their national income. The production of about 70 percent of the world output is controlled by three transnational corporations -- all U.S. firms -- United Brands (previously the United Fruit Company), Standard Fruit and Del Monte.

A report of UNCTAD shows that banana exporting countries have been subsidizing the consumer in the developed countries and creating immense profit for the MNCs. This report shows that of the total retail price local growers earn about 11 percent, while the share of foreign companies is more than 88 percent (Mikdashi, 1976).

Therefore, in 1974 the six Central American countries of Columbia, Costa Rica, Guatemala, Honduras, Nicaragua and Panama created the Union of Banana Exporting Countries (UPEB). The goal of the Union was to coordinate production policies of the members and increase prices. Toward the achievement of the latter, UPEB promoted a tax increase of about $1.00 per box of 40 pounds of bananas. The MNCs' reaction was harsh and forceful. Standard Fruit boycotted Honduras, and United Brands boycotted Panama. The companies stopped shipment of products destroyed fruit in store houses, promoted conflict among the members and even bribed officials of a member country to reduce or abandon the tax increase idea (Mikdashi, 1976; Brown, 1980). As a result, Panama, Honduras, and Costa Rica were forced to reduce their taxes to about 25 to 30 cents per box, and Nicaragua withdrew from the Union. Later, the Food and Agricultural Organization of the U.N. mediated in the negotiations between UPEB and the companies for the establishment of a quota system.

A multiplicity of factors contributed to the ineffectiveness of UPEB. First, the vertically inegrated companies had almost total control over production, transportation and distribution of the commodity. Second, some major producing countries, like Ecuador, Surinam, the Philippines and the Ivory Coast, for various reasons, refused to join the organization. Their action created a large supply of non-member products below the Union's price. Furthermore, lack of information about the structure of the market, inadequate policy coordination and the absence of solidarity among the members are counted as contributing factors to the failure of the organization. Finally, the fact that the

member countries are small, poor nations, depending on one agricultural export (except Columbia and Panama) as the main source of their national income made them vulnerable to the MNCs' threats and minipulations.

Evaluation: During the period of 1964-78 the commodity market witnessed a sudden surge in the emergence of EAs among the Third World countries. In addition to the alliances discused here, there is a producers' association for mercury as well as informal alliances for lead, phosphate, uranium and some other metals (Reynolds, 1978). The enthusiastic response of LDCs to the success of OPEC and increasing influence of the Conference of Non-Alliance led the UNCTAD to ratify a resolution for inegrated commodity programs at Nairobi in 1976. The Nairobi resolution implicitly indicates the failure of the commodity agreement route and defines the objectives, means and procedures for integrated commodity programs. It recommends several measures such as establishment of a common fund of about $5-6 billion to function as a buffer stock, international aid to diversify exports in LDCs, opening of industrial markets to the Third World products, multilateral contracts, etc. (Reynolds, 1978; Rothstein, 1979). The negotiation for the enactment of the resolution has proven to be problematic, reflecting the opposing views of industrial nations and poor countries about the impact of the EAs on the commodity market.

The popularity of EAs among Third World countries stems from the general recognition of their common interests. These countries have realized that they cannot remain diffused and unorganized in the face of relatively organized associations of industrial countries. The fact that core governments are willing and able to interfere on behalf of

their corporations has persuaded the periphery to seek a united front and, if possible, action. It is true that alliances have not always been able to deter overt and covert actions of the core against their members, but they have made these attempts more costly and less feasible.

As far as success and failure of the existing alliances are concerned, the views are divided. However, there is agreement about some of the principle factors that increase the chance of success for an export alliance. Among these factors are the following:

1. EAs are successful when their members have a monopoly over the major resources of the commodity. An abundant commodity defies price control and market regulations, especially if it is found in non-member countries (cf., Law, 1975; Nappi, 1979).

2. When an industrial country is a principle producer and exporter of a commodity, the solidarity among the members is threatened. Developed countries rarely join an export alliance. Therefore, they can undermine any floor price and production cuts established by the members. When they join an agreement, industrial nations are usually against price and tax increases sought by the peripheral nations.

3. Lack of a substitute or inexpensive synthetic products is an important factor for the success of the alliance. The availability of short term substitutes lowers the price, and an abundant supply can undermine the alliance's price increase or production control (cf., Ibid).

4. Members of alliances and their representatives need to acquire adequate information about the market structure, international monetary systems and cycles of supply and demand in the commodity trade. Lack of knowledge can lead to price increases in periods of oversupply

or export cuts when demand is rising.

The Theoretical Implications of Export Alliances for the World-System

> Iran has been industrializing rapidly in recent years. In 1976, 2.5 million people out of a population of 34 million worked in manufacturing industries... ten years earlier, there were only half as many manufacturing workers. Manufacturing now employs up to one-quarter of the work force. This industrialization has been largely financed out of oil revenue...This is a dramatic change for a country that only 45 year ago lacked even a single railway or paved road. (Clawson, 1980:143).

The capitalist world-system has cycles of growth and stagnation, each lasting a few decades. Periods of growth are characterized by rapid capital accumulation, increased productivity of the means of production and rapid changes in social relations of production (Wallerstein, 1980b; Bergesen, 1981). At the end of each period of expansion, stagnation begins, which in turn is followed by another expansion and so on, and the cycles continue. These trends do not affect all countries equally. Wallerstein (1980a) argues that during stagnation the world surplus is redistributed at the expense of core countries. The consequences of capitalist stagnation for core countries are overproduction, general unemployment, high inflation and declining political power in the world-system.

Periods of economic expansion create disequalibrium between the oversupply of manufactured products and the declining demand in the world market. Overproduction in a depressed market, added to price elasticity of some of the manufactured products (like automobiles), shifts the terms of trade more in favor of LDCs. It is during these periods that peripheral countries that are exporters of price inelastic commodities can improve their bargaining position in international trade.

In other words, during times of economic contraction peripheral countries can take advantage of the relative weakness of the core and increase their economic gain and political influence.

"These shifts in advantage are reflected in the policies of states, in the degree of the nationalism and militance and in the pattern of their international diplomatic alliances" (Wallerstein, 1980a:99). Export alliances among the resource producing countries of the Third World are examples of international cooperation emerging during periods of contraction in the world market. The history of existing alliances shows that a majority of them were created at the very beginning of the present recession, 1974-present. OPEC, although it was organized in 1960, achieved its remarkable success in the price increase of 1973-74. Other alliances, in spite of their questionable success, reflect a prevalent orientation among the leaders of peripheries that (a) return on primary products can finance economic growth and (b) a secure return can be achieved by cooperation among the exporters.

For a long time, students of social change thought the sole answer to the problems of underdevelopment is an immediate halt to resoure specialization and instant reorganization of the economy, geared toward industrialization and diversification. The example of core countries had convinced economists, both in socialist and capitalist systems, that the way to go is immediate industrialization. In fact, these words came to be synonyms. However, this proved to be very difficult, if not impossible, as nationalist leaders of many peripheries found out, some the hard way. Numerous obstacles lay in the path of the periphery's industrialization, ranging from lack of capital and technol-

ogy to the outright use of force and manipulation by the core and MNCs. These factors induced the economists and leaders of Third World countries to reevaluate their means and ends. While industrialization and diversification of a national economy remain the ultimate goal, the short term objectives and means are changed. The ruling groups in many peripheral countries have realized that perhaps an immediate overhaul of the economy after political independence is not possible. In other words, by abandoning raw material specialization they do not achieve development overnight, but the return of their export commodity perhaps can finance economic growth.

In order to increase their bargaining power in the world market, some of the peripheries decided to collaborate in the organization of export alliances among the producers of one raw material. These associations permit the peripheral countries to control price fluctuations, regulate production output and increase their remuneration. EAs provide information about the state of the industry and mechanisms of market, reduce the threat of the core and MNCs against member countries, and provide political leverage for their members in the world-system. In other words, EAs can function to change the trends of international trade in favor of resource exporting Third World countries.

As I mentioned at the beginning of this chapter, despite inconclusive evidence, raw material specialization is considered as a prima facie cause of underdevelopment. I also provided a summary list of the reasons contributing to such a hypothesis. If this is the case, alliances among the exporting countries might provide the solution to many of those problems. It is true that trends of the capitalist world econ-

omy have been against the sellers of raw materials, but the examples of some EAs (OPEC and IBA) have shown that these trends can be redirected. Indeed, the inherent multi-dimensionality of the development process permits the leaders of LDCs to utilize unconventional means toward the achievement of a universally acknowledged goal, namely, national development. EAs broaden the scope of available options for the peripheries and allow them to overcome the economic impediments created by an economy based on the export of a single raw material. Given the present structural position of the peripheries in the capitalist world-system, EAs function as a mechanism of "dependence control" for resource exporting countries.

In the following chapter, I will present a case study of a unique export alliance among the petroleum exporting countries (OPEC). This chapter will present the historical performance of OPEC and its impact on the member countries as well as on the world-system.

CHAPTER FOUR

THE CASE OF OPEC

Introduction: In the previous chapter I discussed the role of export alliances in the world-system as a device of dependence control. This chapter is devoted to a case study of OPEC as an example of export alliances. Here, I will review the special qualities of petroleum as a raw material and then present a profile of the petroleum industry before the creation of OPEC. In this chapter the organizational goals and the historical performance of OPEC are studied in the context of the world-system. Finally, the question of dependency and whether OPEC can help its members to overcome socioeconomic dependence are discussed.

Petroleum: A Unique Commodity

It is important to note that petroleum has some unique features that set it apart from other commodities. These special characteristics have, to a large extent, guaranteed the survival and success of OPEC despite internal tension and external hostility. The particular characteristics of petroleum can be summarized into these categories:

1 - Oil is a source of energy that is essential in the extracting of most ores. In fact, the industrial growth of developed countries has shown that access to inexpensive oil reserves can facilitate rapid industrialization. In addition to being a profitable source of energy, it creates and feeds a host of interrelated industries ranging from geological explorations and production, to sea transportation and refining. Today, the petrochemical industry is

a growing field that provides synthetic substitutes for other commodities like natural rubber.

2 - Petroleum has played a crucial role in rapid economic growth and prosperity of the developed countries. Thanks to shrewd planning of the major companies, the industrial structure in these countries is based on oil instead of other energy sources like coal or nuclear power (Banks, 1980:179). In fact the indispensibility of oil for industrialized economies is evident from the long battle among the allies over the area of influence in the Middle East after the World War I. The agreements of the League of Nations gave France and Britain each a generous share of the Arab and Persian oil, but left the U.S. empty handed in this area. Following the U.S. open door policy, the American companies earned their share of the treasure (see Penrose, 1978; Keddie, 1981).

3 - As a consequence of the above features, petroleum demand in the international market is both short and medium term price inelastic. This implies that an increase in the posted price is not followed by a congruent and equal decrease in demand. But a production decline creates a

price increase. For instance, the decline in supply of Iranian oil during the 1979 revolution cut about 2% of the world supply but pushed the oil price up 25% (Banks, 1980: 166).

4 - The search for a synthetic fuel has failed to provide a profitable substitute for petroleum. The energy content of oil shale or tar sand can hardly compete with that of crude oil. So far the utilization of other energy sources like nuclear power or solar energy has proven to be economically unprofitable or their production in lare volumes unfeasible.

5 - The principle oil reserves are located in a few less developed countries. The 14 members of OPEC produce about 50% of the world oil and 90% of the total international trade (International Petroleum Encyclopedia, 1981:425). It is true that some of the developed countries are major oil producers, but their domestic demand, specially in the U.S., far exceeds their internal supply.

The Majors: The petroleum industry is characterized by vertical integration and high degrees of concentration. This implies that a few transnational companies control the various stages of the industry. Furthermore, these companies endeavor to avert competition through agree-

ments or the constitutions of cartels. Multinational corporations in the oil industry are known as the "seven sisters" or the "majors." Five of these corporations are headquartered in the U.S.: Standard Oil of New Jersy (also called Exxon or Esson), Standard Oil of California (also known as Socal or Chevron), Gulf Oil, Texaco and Mobil Oil Company. The sixth and seventh companies are respectively the Royal Dutch Shell which is financed by Anglo-Dutch capital and the British Petroleum Company whose major shareholder is the British government. Added to this list is the Compagnie Francaise de Petroles, 35% owned by the French government.

Oil companies were pioneers in transnational activities. They had the financial resources and technology required for the high risk petroleum industry and were back by their respective governments. The historical relationship among the majors is marked by fierce hostility and cutthroat competition at times and cooperations at other times. Before the growth of OPEC and rise of national companies, these corporations were the dominant force in the petroleum industry. They had an oligopolistic power in all stages of the industry from production and transportation to refining and marketing.

However, after the surge of nationalization in producing countries, the majors lost some of their operations to the national companies. Increasingly, they have become contractors and technical consultants to the government firms which differ from their all powerful traditional role as concessionaire. This, of course, by no means implies the end of the majors' role in the petroleum industry. In fact, they have remained a forceful partner in a trilateral oil market consisting

of OPEC, Multi National Corporations and the importing governments. These corporations have almost exclusive access to the latest technology in the industry which they eagerly protect from the competition, specially OPEC. They are supported by the financial resources of major banks like Chase Manhattan, First National City and Morgan Guarantee (Banks, 1980:170). Thanks to their technology and financial resources, they have retained their oligopoly over the downstream activities, i.e., transportation, refining and marketing.

Therefore, it is important to note that the creation of OPEC and the emergence of national companies did not lead to the disappearance of the majors from the industry. Rather, these processes have brought an equilbrium to the government-company relationship by eliminating the autonomous position of Multi National Corporations from within the host country. The "majors adapted surprisingly well to these new arrangements" and their healthy profit explains their acquiescence (International Petroleum Encyclopedia, 1981:425). The companies have passed the cost of oil to their consumers which particularly hurts less developed countries.

Oil Industry Prior to OPEC

The petroleum market from 1950 to the early 1960's was a bilateral system in which the oil companies were suppliers and the rest of the world, including the host countries, consumers. From the turn of the century until the late 1960's, the oil industry was markey by the rapid rise of the majors, huge profit and colonial concessions. Multi National Corporations, being the only dominant force in the market, unilaterally decided on production, transportation, price and even

taxes. After several years of cutthroat competition, they reached an agreement and divided the world market in 1929. This cease fire known as the Red Line Agreement divided the area of Iraq, Saudi Arabia and Bahrain among the majors for concession rights (Eckbo, 1976). They agreed not to seek concessions in each other's area. Of course, this was not the end of competition among the companies. In fact, their relationship is characterized by competition at times and alliance and cooperation at others.

Concessions: These rights, particularly in the Middle East, were granted by uninformed officials of semi-independent governments and were generally unfavorable to the host country. The first concession in the Middle East was granted in 1901 by the government of Iran to William D'Arcy of England, for a period of 60 years. This created a government within the government by granting to the concessionaire the exclusive right to explore, extract, export and sell petroleum as well as the right to engage foreign nationals. The concessionaire "was immune from taxes and custom duties" and was in charge of establishing and running exploration companies (Rouhani, 1971:40). This concession covered the whole country except the five northern provinces where Russia had influence. Following the D'Arcy's concession, similar concessions were obtained in Saudi Arabia, Kuwait, Bahrain, Iraq and other oil rich areas of the Middle East. These concessions display the following characteristics:

1 - They covered a large portion of a country and in some cases even extended to the whole territory of a country. For instance, the Iraqi concession

covered the whole Eastern section of the country of the Tigris except Basra; and D'Arcy's concession covered all of Iran except the five northern provinces; and those of Kuwait and Qator included the entire country (Rouhani, 1971).

2 - The duration of concessions extended over several decades from sixty to ninety-two years. But, the concessionaires were generally dissatisfied with the time period and did not miss any opportunity to extend the period of the contract.

3 - In addition to being excessively long, these contracts had no clear provision for change, negotiation or revision. The special clauses included in every concession prohibited the host government from any attempt at changing the terms of the contract.

4 - The nature of concessions included all stages of the petroleum industry from research and exploration to marketing and distribution. "Furthermore, they added to these operations, the provision of accessory services related to the infrastructure that did not exist, or existed to an insufficient degree, in the countries concerned" (Rouhani, 1971:41).

5 - The host government had a fixed income which in the Middle East was about 4 shillings per ton or 22 cents per barrel. The government's rights to impose taxes on production, export or profit of a concessionaire was severly limited by contract provisions. In fact, the royalty received by the government was so meager that it could not compensate for the expenses incurred by the state to sustain the industry's operation (Rouhani, 1971; Mikdashi, 1972).

6 - The concessionaires had the right to employ foreign nationals whenever they deemed necessary. Although some concessions had provisions for training of indigenous personnel, the concessionaires usually declined to undertake such a program and except for a few cases, hired only unskilled laborers from the local population (Rouhani, 1971:42).

7 - As a consequence the concession system severely limited the sovereignty of the host government. As a matter of fact, it undermined the independence of the state by creating an enclave government -- sometimes stronger than the national government -- within the territory of a less developed country. The concessionaires defied

> both the administrative and judicial authority of the governments and referred their conflicts to the international tribunals (e.g., Iran-British Petroleum conflict). It seems that the concession system in the oil exporting countries marks the end of colonialism and the beginning of socioeconomic dependency.

The excesses of concessionaires contributed to a widespread social awareness about the colonial nature of this system and the significance of oil in international trade. The growing discontent with the exploitation of foreign corporations led to the re-evaluation of the concession system everywhere. Venezula was the first country that initiated a petroleum law limiting the period and territory of concessions and promoting a system of 50-50 profit sharing with the companies.

Following this action, the Venezuelan government sent a special commission to the Middle East dispensing information about the system of profit sharing and the procedure involved in taxing the companies' profits.[1] In 1950, Saudi Arabia, and later Kuwait, emulated the Venezuelan initiative and drafted new contracts with the American companies based on the profit sharing system. However, the procedure for Iran and Iraq, whose major concessionaire was the British Petroleum Company, proved to be more costly and difficult.

Iran: The first concession was granted to William Knox D'Arcy in 1901. This company later became the Anglo Persian Oil Company. In 1914, the British government bought the majority share of the company

and changed it to the British Petroleum Company which was the largest oil company in the Middle East before World War I. The 1901 concession was revised in 1933 without any increases in the Company's responsibilities toward the government or any significant increase in royalty payments.[2] At the same time American companies made 50-50 profit sharing contracts with Saudi Arabia and Kuwait. In Iran the social mileu was marked by disillusion with the concession system, widespread discontent about the state of petroleum industry and more important, British domination. This general feeling of discontent and frustration led to a series of social movements, traces of which are observable in the recent revolution.

The protracted negotiation that was originally started by the government's demand for a 50-50 profit sharing contract created a series of unforseen incidents. The "supplementary agreement" offered by the company failed to gain the Parliament's majority vote in 1949. The next year the prime minister who was pushing for the passage of the agreement was assassinated (March 7, 1950). After a week Parliament approved a nationalization bill which was offered by the new prime minister, Dr. Mossadeq. This single article law nationalized all the petroleum industry throughout the country without any exception and brought all the activities related to exploration, extraction and exploitation under the domain of the government (Rouhani, 1971:48).

This act enraged the British. They withdrew from the negotiations, sent the British Navy to the south of Iran, enacted a worldwide blockade of Iranian oil, boycotted the Iranian deposit of funds for purchase of manufactured products and cut diplomatic relations with Iran.

The following years until 1953 were marked by national unrest, severe economic problems, temporary abdication of the monarch and finally ended with a CIA - Intelligence Service design coup that overthrew the cabinet and replaced it with a new government. This cabinet signed a contract with a consortium consisting of eight multinational corporations which were: British Petroleum 40%, Royal Dutch Shell 14%; Compagnie Francaise de Petroles 6%; Exxon, Gulf Oil, Texaco and Standard Oil of California each 7% and Iricon Agency 5% of shares.

Iraq: The history of Iraq from the 16th century until the middle of the 1950's is marked by colonial domination of one sort or another. Iraq was invaded by the Turkish troops and became part of the Ottman Empire from 1639 to 1918. During the First World War, British troops occupied Iraq and Syria and claimed these territories from the Turkish Army. After the war, the League of Nations, according to the San Remo Agreement, assigned Iraq to the British Government as a mandated territory, and Britain immediately appointed Amir Faisal as the first King of Iran, (1920). This arrangement was very similar to the colonial domination in which the decision making and administrative functions remained in the hands of the British authorities, except that they had a nominal ruler who was a native of the country. In 1932 Iraq became formally independent, though British influence in political and economic activities remained intact. During WW II, British troops again occupied Iraq to secure the Allies' military base and access route to Iran and India (1941-45). In spite of the destruction caused by the invasion and despite the popular demand to the contrary, the Iraqi rulers maintained their ties with Britain while resisting any demand

for social reforms. In 1958, a popular uprising orchestrated by the army officers under the leadership of the Karim Qassim overthrew the monarchy and established a republic (Penrose, 1978).

The conflict between the government and the Iraq Petroleum Company (IPC) arose over the territory of the concession, port dues, price of crude and the system of royalty payment. The majority shareholder in the company was the British Petroleum Company which had initially obtained the concession when Iraq was a British colony. This concession covered the whole area East of Tigris. The company had developed only a small portion of this area and ignored the government's demand for expansion of operation.

After the revolution of 1958, the new government started serious negotiations with the company about the revision of the concession. Being aware of Mossadeq's fate in Iran, the new government start negotiations in a "pacific atmosphere" but remained adamant about its share in the company's profit and the fate of the unexplored areas. During the negotiations the company representatives used delaying tactics by returning to their headquarters after each meeting with the government officials. President Qassim, who himself headed the Iraqi team, became extremely frustrated with the company's tactics and, after discovering an assassination attempt against his life instigated by the British Intelligence Service, stopped the negotiations (Penrose, 1978).

In December 1961, the Iraqi Parliament passed a law known as Law No. 80, that limited the area of the Iraq Petroleum Company's operation to the section that was alread developed. Therfore, the government stripped the company of 99.5 percent of their concession area uni-

laterally. After three years the government created the Iraq National Oil Company which, among other things, is responsible for development of the area recovered from the company. The fruitless negotiation with ICP continued without any result until 1972 when the government nationalized the Iraq Petroleum Company and reached a settlement with the company the following year. Since then, the Iraqi government has been trying to develop an independent petroleum industry and after long negotiations has signed a contract with the French company Compagnie Francaise de Petroles. There is also a close and extensive cooperation with the Soviet Union for the development of the northern area of the country.

The conflict between Iran and the British Petroleum Company on the one hand and protracted negotiations between Iraq and IPC on the other hand created a feeling of insecurity and powerlessness among the Middle Eastern exporting countries. Meanwhile, Venezuels, which has a limited reserve, decided to maintain a steady production level and increase its gain by increasing the price per barrel instead of increasing production. This policy reduced the competitive edge of the Venezulean supply in the face of low-cost, high-yield Middle East production. These problems were amplified by the complex nature of the industry and secrecy surrounding the oepration of multi national corporations.

Therefore, the need for cooperation instead of competition became evident to the exporting countries. In 1953, in a joint agreement the two countries of Iraq and Saudi Arabia decided to establish periodic consultations to discuss their petroleum policies and to exchange information. Furthermore, this agreement was aimed at assisting the governments in achieving the best term clauses from the companies, i.e., a

common practice in which the host governments negotiated with the companies the new terms obtained by other exporting countries.

The Role of the Arab League in Oil Cooperation: This league originally emerged as a response to the creation of Isreal and as a defense treaty among the Arab nations of the Middle East and northern Africa. The league also advocated close cooperation in the areas of economic, communication and social affairs. Due to the political significance of oil, the League also established a Committee of Oil Experts in 1952. This Committee has been able to educate both the governments and the public about the petroleum industry and has produced a large number of pulications dealing with the state of the industry in the Middle East (Mikdashi, 1972:29).

In February of 1950, the British Petroleum Company reduced the posted price of Middle East crude about 18 cents a barrel. This unprecedented cut not only created discontent in the Middle East, but also caused Venezuela's objection. The fact was that the under-priced Middle East crude was invading the traditional Venezuelan market and undermining its position in the petroleum industry. Following the price cut of the Middle East product, the price of Venezuelan crude was also cut by the companies to maintain their market.

Now the interdependence of the market and the necessity of cooperation were obvious to all major oil exporting countries of the Third World. The first Arab Oil Congress, which also included delegations from Iran and Venezuela, met in Cairo in 1959. Egypt, though not an oil exporting country, had a dominant role in the Arab League which made it an effective consultant to the Arab nations and a peace-maker

among them. This congress provided a forum for exchange of information, policy discussion and possible solutions. But the congress was short-lived and did not produce a comprehensive policy for action.

In August 1960, the majors again reduced the price of crude oil unilaterally from 8 to 10 cents a barrel. There were several reasons for these cuts such as the on-going competition among the majors as well as competition between this group and the independent companies that usually had lower prices. But, more important was the accelerating industrial growth of Europe and Japan. The oil companies had considerable interest in establishing oil as the major source of energy for re-industrialization of Europe and Japan instead of coal or nuclear energy (Banks, 1980). This price cut cost the Middle Eastern producers about 93 million dollars during the remaining months of 1960 (Banks, 1980). With the renewed initiatives of Venezuela's minister of Mines, Porez Alfonzo and Saudi's Director of Petroleum Affairs, Abdallah Toriki, the representatives of five countries (Iran, Iraq, Kuwait, Saudi Arabia and Venezuela) were invited to Baghdad in September 1960. After 4 days of deliberations they signed an agreement and formulated the charter of the Organization of the Petroleum Exporting countries.

OPEC

At the beginning the goals of the Organization were greatly influenced by the percipitating factors that prompted its establishment. In the first two Resolutions drafted by the founding members the emphasis was on restoring the price of crude oil to the level of pre-reduction by companies. The objectives of the Organization are generally oriented toward securing members' sovereignty over their mineral re-

sources and reducing market fluctuation. The founding members were careful not to narrow the scope of the Organization to one goal that could become obsolete over time.

Objectives: The organizational goals can be grouped into four categories; the first group deals with the market fluctuation and price stabilization of crude petroleum in the commodity market. These goals are designed to insure a remunerative return to the exporting countries by stabilizing the posted prices, monitoring oil companies' marketing operations, "relating crude oil prices to those of manufactured goods" (Resolution IV.32) and restricting production if deemed necessary.

The second category pertains to securing the sovereignty of the member countries over the oil industries insider their territory. It emphasizes the right of members in securing a larger share in the administration and ownership of the foreign enterprises and full integration of the "oil" industry in their territories within their national economies" (OPEC bulletin, 1970, Vo. 6:2). This goal is to be achieved by creation of national companies and purchase of foreign companies' assets (Banks, 1980:182). Furthermore, to protect members' full autonomy, the Organization emphasizes that all agreements are subject "to the legal system of the member countries whose courts must have exclusive jurisdiction on all disputes relating to the implementation of the agreement" (Resolution XVI.90).

The next category of objectives portrays OPEC as a source of information gathering and a forum for policy discussion and exchange of ideas. In this capacity, the five departments under the Secretary General provide up-to-date information about various aspects of the in-

dustry from technical to legal changes, both in the member countries and in consuming nations.

Finally, there are developmental goals which emphasize the role of oil revenue in promoting economic diversification and industrialization. The member countries are keenly aware of the finite nature of their commodity; therefore, they emphasize both petroleum financed industrialization and development and expansion of their refining capacity and petrochemical industry.

Organizational Structure: OPEC's internal structure consists of the Conference, Board of Governors, Economic Commission, Secretariat and Coordination Committee of National Companies. The Conference has the highest authority and is composed of delegations from all member countries usually at ministerial levels. It meets twice a year and is responsible for formulating the general policy of the Organization, approving the budget, considering membership applications and appointing the Chairman of the Board, the Secretary General and Auditor for each year (for more detail, see Resolution VIII56). The Conference is based on the unanimous voting principle and equal voting rights.

Each member country sends a representative for a period of two years to the Board of Governors which meets twice a year. The Board functions as a board of directors which supervises the management of the Organization. It is a mediatory organ between the conference and the Secretariat which supervises the enforcement of the Conference's decisions by the Secretary General and submits reports and recommendations to the Conference. The Economic Commission was created in 1964 and consists of one expert from each member country. Its task is to

gather information and analyze the state of the market, forecast future changes and provide the members with necessary information about their home market. The Secretariat consists of several departments and functions both as a research unit and as a service sector for the Organization and the members. The unit is headed by the Secretary General who is the representative of the Organization and must be a national of one of the member countries with strict qualifications spelled out in the Resolution of 1971. Finally, the Coordination Committee of National Companies created in 1966 meets twice a year with one representative from each national company. The major objective of the committee is policy coordination among the national companies in order to prevent competition among them (for more detail see Rouhani, 1971; Mikdashi, 1972 and 1976).

Membership: Countries seeking participation in OPEC should have two qualifications; (1) be a net exporter of crude petroleum in substantial quantity and; (2) have fundamentally similar interests to those of the member countries. As stated, these conditions are vague, leading to speculations about the exact amount of "substantial quantity" and the nature of "similar interests" of the members (Rouhani, 1971).

At present OPEC has 13 members which are Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qator, Saudi Arabia, United Arab Emirates (UAE)[3] and Venezuela.

Evaluation: OPEC and its survival, despite numerous difficulties, have puzzled students of political economy for some time. Social scientists' reactions were (and still are) as varied as their disciplines, perspectives, methodological tools and sometimes individual

values. Some ignored it as a fad, a new show-case for displaying Third World countries' militancy. Some believed it to be an unworkable scheme which, given the greed of the governments, diversity of the members and reaction of the consumers, would simply wither away. There were, of course, those who believed it to be an effective way to establish a united front of poor countries against the domination of the rich nations. And some even had their cost-benefit analysis in order, showing that in sum this "commodity cartel" was breaking even. The historical performance of the Organization has supported some of these evaluations but not others.

Despite all the pitfalls, the export alliance among the oil exporting countries still exists and manages to function in a complex and multidimensional oil market. The Organization faces numerous difficulties both from within and without. The latter includes the majors, developed consuming countries and less developed consuming countries. The historical evaluation of OPEC reveals failures of various magnitude, the analysis of which can contribute to an understanding of the Organization and its function for the members.

Failures: OPEC during the 22 years of its existence has on several occasions failed to mobilize sufficient support for an embattled member country. For instance, when Iraq's government nationalized its oil industry (Law No. 80), the companies reduced production inside the country and increased their output in the oil fields of the neighboring countries. Being the beneficiaries of this cut, none of the OPEC members effectively opposed the companies' action. While they verbally supported Iraq in six different resolutions, the member countries fail-

ed to offer any tangible assistance.

On another occasion members denied another member even formal support in a resolution. This was the case of Libya against British Petroleum in which the government of Libya had nationalized one of the company's operations in Libya. It was argued that Libya's motivation was Pan/Arabism against an Iran-Britain adventure in the Persian Gulf. Iran, with the support of England, has seized three small islands in the Persian Gulf. These islands were the subject of a long dispute between Iran and the United Arab Emerates. OPEC members viewed this as a conflict between two members and flatly refused to interfere (Mikdashi, 1976:59-60).

There are several occasions in which members have ignored their unanimous resolutions. In 1969, a unanimous resolution asked the members not to grant oil rights to those advanced countries whose governments' policies are oriented toward reducing the price of imported oil below the market price set by OPEC. This resolution was referring to Japan's tax system. Before long the two Sheikdoms of Qator and Abu Dahi granted new oil rights to Japan. Their reasons were urgent need for revenue and the fear that Iran might develop the neighboring area at their expense (Mikdashi, 1972 and 1975).

OPEC now consists of 13 countries with different scioeconomic structures and diverse political orientations. Therefore, there have been times when its member failed to cooperate, even for achieving their principle goal, namely a unified posted price. Some of the members are populous nations with limited oil reserves who prefer to increase their revenue by price increase instead of production cut, and there are those

who have abundant reserves and prefer to do the reverse. The difference among countries like Saudi Arabia, Kuwait, and UAE on the other hand is a well known example of disparity in OPEC. It was Saudi Arabia who vetoed a resolution sought by the majority calling for a joint production and marketing system. In 1974, the same government opposed the majority seeking a production cut or a price increase. The fact is that the OPEC members can be alligned on several lines based on economic interests, regional proximity, ethnic identity or political orientation. But, despite these disparities, the organization has managed to survive internal rivalries and to be an effective alliance.

Successes: OPEC's achievements are better known than its failures. In the first decade of its establishment, the Organization maintained a steady process of negotiations with the companies for a joint decisinn on posted price. The companies resented govenments' interference in price setting and, being assured of their power in the market, delayed and stalled a final decision for several years. Meanwhile, the Organization prevented any decline in posted price. Finally, when in the meeting of October 1973, companies again returned to their countries claiming they had to consult their government before a final decision, OPEC ministers fixed the price of oil unilaterall at $5 a barrel, (Banks, 1980). During the same period, the Organization helped its members to increase their control over the oil industry in their territory. OPEC's achievements can be summarized as follows:

1 - Maximazation of member countries' benefits from production and export of their petroleum. OPEC has been able to establish a uniform posted price

(with variations for specific features of the product) of crude petroleum for its members. In the last decade, the OPEC price has also become the base price of crude oil in the international market. The Organization has not only been able to increase the price unilaterally, but it has also regulated the market by production control. Indeed, the creation of an export alliance among the oil exporting countries has enabled the members to stabilize the market and prevent price decline, consequently improving their revenue.

2 - Increased national control over the oil resources. Integration of the oil industry into the national economy was one of the major goals of the Organization and recent findings reveal that member countries have been very successful in increasing their ownership and participation in the various stages of the petroleum industry. In a report the International Petroleum Encyclopedia indicates that the share of non-socialist producing countries in ownership of the supply outside the U.S. and Canada, increased from 6 percent in 1970 to 55 percent in

1979. During the same period the share of the "seven sisters" declined from 60 percent to 25 percent (1981:425).

3 - Rise of national oil companies in international trade. Following from the above factor, the national oil companies existing in the member nations have become active participants in the operation of the industry by reducing the autonomy of the majors in their countries. In a report, J. Lichtblau, executive director of the Petroleum Industry Research Foundation Inc. notes that "in those OPEC countries where the majors, as well as other foreign countries, still operate they have lost the power to post prices, to set production levles, to determine productive capacity, and to decide when and where to engage in exploration activity" (Ibid:426). In addition to the above functions, national companies ahve become very active in marketing their product and try to eliminate the middle man by dealing directly with the importing governments. The role of these companies is to tie the export of crude petroleum to the long term inter-

ests of the national economy (cf., International Petroleum Encyclopedia 1981:424-29).

4 - An effective source for information gathering and a forum for exchange of information. The complexity of the petroleum industry, added to the secrecy surrounding the operation of the majors, creates a feeling of frustration and alienation among the exporting countries. Before the creation of the Organization, the host governments had only nominal access to the bookkeeping of the companies which hardly ever permitted government auditors to review their system. Furthermore, due to a lack of established channels of communication, host governments had little knowledge of the operation of the industry in other exporting countries. In this sense OPEC has performed a double function in eliminating these problems. (1) By gathering the top officials of the member countries twice a year it has served as a forum for exchange of information and communication among the policy makers of the exporting countries. (2) Furthermore, its Economic Commission has been an effective source of information gathering. This organ provides detailed and accurate information

about the market, companies, changes in members' and non-members' industry and other petroleum related areas. It also conducts research on the state of economy of members, their development projects, economic trends in developed countries and other issues that effect the members' economy.

5 - An effective alliance for the exporters of a raw material. In spite of their differences and even conflicts, OPEC has made cooperation in oil related areas possible among its members. The second resolution specifies the principle goal of the Organization as "the unification of petroleum policies for the member countries and the determination of the best means for safeguarding the interest of member countries individually and collectively" (Rouhani, 1971:78). OPEC has been very successfull in achieving this goal

OPEC: A System of Dependence Control

The capitalist world economy creates a structural hierarchy that promotes capital accumulation in the core at the cost of the Third World countries. Although the forms of exploration throughout the historical maturation of capitalism have changed, the consequences for the

periphery have remained the same. After removing the residue of colonialism, these countries became inflicted with "dependency" that represents a state of slow growth and superficial development.

Therefore, once again, the familiar question of "what can be done" arises. In some of his essays Wallerstein has reviewed the performance of four historical paths chosen by the periphery to "make it" in the world-system. These are, socialism, "seizing the chance," "promotion by invitation" and "self-reliance" (1980a).

The socialist states create an awkward dilemma for world-system theory. Their existence and participation in an all encompassing world-system challenge the fundamental assumption of the model. Are these societies socialist systems moving toward communism -- as they claim -- or merely different forms of state-ownership -- as some of the world-system theorists argue? If the capitalist world economy is based on the principle of production for profit, do socialist states participate in this system for the same reason, i.e., profit? What is the nature of the relationship between the socialist states? Is the relationship between the Soviet Union and poor socialist countries, like Cuba, a core periphery relationship?

The question pertaining to this paper is whether socialism as a strategy of structural change presents a breakthrough for the peripheries. The answer in the literature of the world-system/dependency varies from a simple "yes" offered by Amin, to "maybe" by Wallerstein and a simple "no" by Boli-Bennett. For some social scientists like Amin (1977) and Emmanuel (1972) socialist states are striving forces moving toward a system of durable social justice and human freedom. On

the other hand, Boli-Bennett believes that these societies are "statist" systems in which the "political and economic elite groups" have become "imbued with the entire corpus of world ideology" and the system itself is "fully integrated into the world-system," (1980:88).

For Wallerstein the explanation of the role of the socialist states proves to be more problematic. While being committed to the historical necessity of a socialist world-system, he seems uncertain about the function of the socialist countries. In one of his essays he refers to them as systems of "state-ownership" which is distinctively different from a socialist economy. They are "merely a variant of classic mercantilism." Their function is political mobilization of the discontented elements in the world-system for its transformation to a socialist system (1980a:88). But, in another place he refers to these countries as socialist states that have a limited relationship with the capitalist countries. He believes that the "normal" integration of these societies into the world-system depends upon the outcome of an on-going conflict among two opposing groups inside them. A faction called "Reds" prefers "barter deals" of limited magnitude with the capitalist countries and consequently relative withdrawal from the world economy. In contrast, the "Experts" push for the "normal" integration into the system via "market trade" instead of "barter deal" (1980a:113).

In sum, there is a general agreement that some of the "socialist" states, like the U.S.S.R. and China, have overcome the state of dependency and managed to secure their autonomy. But the question pertaining to the relationship among the socialist states, their role in the world-system and especially the viability of a socialist state as an anti-

dependence system brings conflicting answers and heated discussion.

The second avenue called "seizing the chance" (also known as import substitution) refers to structural mobility of the periphery by taking advantage of the world market contraction. It is argued that in the cyclical downturn of the capitalist world economy some of the peripheries can expand at the cost of the core. These are relatively strong peripheries that have some form of industrial production suitable for speedy expansion without requiring strong financial support. As Dos-Santos explains, in a period of economic downturn LDCs' exports tend to decline and diminishing foreign currency reduces the size of the import sector. Then a national industry that has an internal market and weak international competition can expand when supported by favorable state policies (in Wallerstein, 1980:77). The classic examples of this path are Russia and Italy in the 19th century.

However, it is argued that the solution of the seizing the chance involves high risk and can lead to dependent industrialization (Robinson, 1979), or dependent development (Evans, 1979). The problem lies in the reliance on the MNCs for manufacturing equipments and processed raw materials. The technological dependency today is one of the significant impediments of the periphery's economic growth. Wallerstein believes that this solution has little chance of success due to internal pressure (large land owners) and external strain (technological dependence), reducing the periphery to the suppliers of the products that the core find unprofitable to produce (1980a:79).

If these countries succeed in their state-directed aggressive economic plans, they might expand at the cost of the core countries and

start exploiting other peripheries. In this case they reach core status -- like Japan -- and seek the continuation of the exploitative process while striving for the survival of the capitalist world-system. Wallerstein believes that "this is not development, but successful expropriation of world surplus" (1980a:101). On the other hand, if they fail to become a core country, their fate is a state of permanent semi-peripherality (or peripherality) until the system changes.

The third solution is the old example of the open door policy or "promotion of invitation." This system is based on the theory of "comparative advantage" and the free trade doctrine. It refers to an industrial or agricultural production financed by foreign capital, either directly or through cooperation with the national bourgosie. After decolonization the protectionist legislations in some of LDCs, limited the MNCs access to the Third World countries market. Therefore, they set out to jump over the tariff barriers by transplanting some of their industries to peripheries. Since the primary problem of LDcs is shortage of capital, many of them welcome -- sometimes eagerly seek -- foreign capitals.

The difference between this path and the path of seizing the chance is that this system operates in close cooperation with foreign capital in periods of economic expansion. Furthermore, it is available to the countries with lower industrial growth than those which choose the second route.

The problems associated with this strategy are numerous and well-documented. In the first chapter, I presented the results of some empirical studies providing evidence that direct foreign investment does

not contribute to growth. The world-system/dependency studies argue that foreign investment is detrimental to the economic development of periphery because it drains the profit and interest payment from these countries' economies, stifling their infant industries, destroying the local economy, manipulating the national government, promoting consumerism, etc.

Finally, the path of "self-reliance" is a strategy of structural change independent of external aid and influence. It is oriented toward withdrawal from the world-system, moving toward self-sufficiency and reliance on internal resources as much as possible. Tanzania and Cambodia are two examples of this path. While the latter is facing a civil war, the former is moving in the direction of slow growth and national poverty.

It seems that the necessity of complying with the demands of the world economy forces those who seek self-reliance or any anti-integration path to submit to the integration trends. Wallerstein recommends the mobilization of the Third World countries for the transformation of the system. Meanwhile, he avoids policy suggestions and leaves the leaders of the Third World countries with the concrete dilemma of surviving in the system -- while striving for its fundamental transformation. To do that, he offers them one piece of advice, "to use the subtleties of careful intelligence and to coordinate with others elsewhere the long run strategies that will permit more fundamental transformation" (1980a:92).

Indeed, the theoretical postulate of world-system theory can hardly accommodate the idea of an individual country's initiative. It

seems that the fate of peripheries is to tolerate the present in hope of a better future. While the plight of the Third World countries is real and disheartening, their impass as portrayed by the world-system/ dependency theories may not be inevitable. The few existing studies of strategies of structural change put the emphasis on the subject of structural mobility and ignore the practical policies of dependence-control. Dependency -- as Tugwell has put it "is not immune to policy adjustment, its scope, forms and direction of change can, in most cases, be shaped and managed" (1974:184). It is in this context that I suggest, given the present condition of the world-system (discussed in previous chapters) and the domination of the dependency-imposing agents (multi national corporations and the core), that export alliances can function to reduce the dependency of peripheries. Because, regardless of the "harshness" of the capitalist world-system and "desirability" of another system, Third World countries have to function in this system and utilize the available means to secure their autonomy.

In the second chapter, I discussed the consequences of resource-specialization for the economic development of the periphery . I also suggested that the organization of export alliances among the raw material exporting countries can control and redirect these consequences. One of the prime examples of these alliances is the Organization of Petroleum Exporting Countries. Throughout the 22 years of its existence, OPEC has transformed the position of its members from sheer dependency and submissiveness to a state of self-assertion and relative growth. It has secured the sovereignty of the members over their mineral resources and helped them to integrate their petroleum industry into their national

economy. It has increased their remunerative return on the export of crude petroleum leading to higher domestic capital formation in the member countries. OPEC has been an effective "consciousness raising" agent both among its members and among other Third World countries (Mikdashi, 1976:70, OPEC Bulletin, 1969, No. 3). A case in point is the example of the Arab-oil Embargo of 1973 in which some of the members took collective action in order to express their political position on an international issue. Furthermore, during the last two decades, OPEC has become a significant force in the international petroleum market by stabilizing the posted price and regulating production.

In a multi-dimensional, interdependent world market there are built-in tendencies for domination and exploitation. To redirect these processes and avert their costly impositions call for a dynamic balance between conflict, cooperation and experimentation. The historical background of OPEC provides the foundation for an argument in favor of export alliances and their role in the world-system. In the next chapters, I will present a time series model foran empirical study of the role of OPEC as a dependence control scheme.

NOTES

[1]The motive behind Venezuelan contact was purely self interest. Venezuela, compared to the Middle Eastern areas, has limited oil reserves and therefore, prefers to increase its revenue by a price increase instead of a production increase. Concequently, a high-price, low-yield output threatened the Venezuelan position in the commodity market.

[2]The company with the backing of the British government ran the oil industry in Iran like a powerful enclave government. There were even attempts by the company to spur separatist movements in the oil rich province of Kuestan in order to separate this area from the rest of the country (for more details see Keddie, 1981).

[3]UAE is a loose federation of seven Sheikdoms: Abu Dhabi, Dubai, Sharjah, Ajman, Fujairach, Umm of Qaiwain and Rasal Khimah.

CHAPTER FIVE

HYPOTHESES

The previous chapters provided a presentation of the international division of labor and role of peripheries as resource producers. Generally, there are two approaches to the question of raw material specialization and its impact on peripheral economies. On the one hand, the utilitarian model, drawing from the idea of "comparative advantage," argues for the distributive power of the free market. This school, as Bhagwati noted, rests on the idea of "benign neglect" in the sense that "while the different actors in the world economy pursue their own interests, the result will none-the-less be to benefit the developing countries" (1977:2). This approach points to the internal structure of LDCs to account for the persistence of poverty in these countries while core countries prosper.

On the other hand, the world-system/dependency model argues that the principle of comparative advantage promising maximized return on specialized products, works against the long run interest of the Third World countries because the major products that LDCs can deliver to the international market in large volume are unprocessed commodities. The dependency model argues that this type of specialization is detrimental to the long run goals of economic autonomy and growth. In other words, free trade promotes a hierarchical division of labor among countries leading to unequal growth and international inequality. This model points the finger to the world economy and external exploitation as the impediments to economic prosperity of LDCs.

However, reality seems somehow removed from the pure version of either model. It is perhaps a combination of both. What brings the two models closer is an internal condition of the periphery oriented toward the world economy. This internal condition promoted by external forces, is a growing awareness in peripheries about mechanism of the world economy and their role in it. It has gradually educated people to the general tendencies of international relations, acts and intentions of the core and MNCs behavior. The effect of this group consciousness among the periphery is reflected in their various cooperative efforts, (e.g., The Conference of Non Allied, Group of 77), their similar stand on numerous issues of the North-South relations, and their continuous demands for redistribution of power and resources at the international level. As far as the question of raw material specialization is concerned, the universal committment of the periphery to the goals of economic growth and diversification attests to their awareness about the problems of a single commodity economy. Indeed, the short term gains of resource specialization do not blind these countries to its questionable long term effects. But, while being committed to their national goals, the nationalist leaders of Third World countries are faced with the immediate problems of an unpredictable commodity market, balance of payment problems, high priced technology, etc. A solution attempted by some LDCs has been some form of collective action on the part of resourse exporters vis-a-vis the core and MNCs. The dramatic success of OPEC confirmed a general recognition that a collective action might deliver demands that individual negotiation with the core fails to produce.

The world-system theory has generally overlooked the counter-dependency movements emerging in peripheries (1). The present tendency in the world-system/dependency model is a one-sided emphasis on the exploitative nature of the world economy and is indifferent to the resurgency moves occuring in peripheral nations. Indeed, a repeated criticism of the world-system/dependency model, that it underestimates internal processes of the periphery, seems a viable point. Today, LDCs try to participate in the system and modify its processes in order to accomodate their interests as much as possible. However, due to the lack of any proven route, their efforts for structural change and economic development are based on trial and error. Therefore, a systematic evalution of these policies not only will enrich the theoretical foundations of the model, but it will also be beneficial to these societies.

This research is an effort in that direction. I began by reviewing the major points in the classical discussion of the causal relationship between raw material specialization and economic stagnation. Given the controversy surrounding this issue and the contradictory findings, I examined the historical data on the conditions of the international commodity market in the last two decades. There seems to be a general agreement that terms of trade in international trade are against the commodity exporters. A device utilized by some of the LDCs to counterbalance the unfavorable condition of the commodity market is adoption of integrated policies coordinated by the organization of export alliances. The historical materials presented earlier suggest that by uniting in the EAs peripheral countries can control the dependency generating process of the world economy. The specialized econo-

mies of the LDCs generate a chronic deficit and unpredictable annual gain which, in turn, make long term planning difficult. A united decision made by the EAs can stabilize the market and improve members economic gain. In fact, the past historical performance of some alliances and peripheries committment to them suggest that EAs can be effective as a mechanism of dependence control.

The Consequence of OPEC for Member Countries

The Organization of Oil Exporting Countries crystalized the idea of solidarity among peripheral countries. The member countries were able to change the terms of trade in the petroleum market, in fact to become the dominant voice in that particular market. The enthusiasm generated by OPEC's successful price increase of 1973 prompted other exporting countries to follow the same route. I have reviewed the historical performance of the main EAs in Chapter Two.

For the purpose of a quantative analysis of the effect of EA participation on economic growth, I will restrict my present research to a cross-national study of the effect of only one alliance, namely, OPEC. The reasons for this limitation are generally common to all macro level cross-cultural studies. First and foremost is the problem of data limitation. Despite the desirability for a mathematical comparison of at least two alliances and their members' growth rates relative to non-member exporting countries, I have been unable to obtain the necessary information for this task. The second problem, more closely related to this study, is the delay in the diffusion of recent information by the governments or international agencies or both. In other words, it is extremely difficult to obtain recent information

about the LDCs, considering the limited resources available. Therefore, the fact that most other alliances were formed after 1973 further complicates the task of information gathering. The time series technique to be used require data over a span of time. In the case of most EAs this means very recent information which is not yet available.

Thus, in the quantitative section that follows I must limit the study to the OPEC countries. The effects of OPEC participation on economic diversification and growth of its members are analyzed using three techniques of cross-sectional regression, pooled time series and differential equations (see Appendix One).

Hypotheses

Domestic Capital Formation: The capitalist world-system is based on competition of the states for the absorption of economic surplus. The core areas that have strong states and monopoly over the means of force can drain the surplus produced in the periphery. It is argued that foreign investment, through remuneration of profit and interest, "decapitalizes" the peripheral economy and contributes to periphery underdevelopment (Amin, 1977; Frank, 1969). EAs emerged as a result of periphery frustration with under-priced raw materials. The existing alliances have all been to some extent, successful in controlling price fluctuation and increasing their member countries' economic gain. This suggests the following hypothesis:

> HYPOTHESIS 1: Participation in OPEC contributes to capital formation within member countries.

Economic Diversification: It is argued that the major proportion of the core investment in the periphery goes to the areas that

guarantee high return in a short period of time (Chirot, 1977). Extractive industries have been traditionally one of the areas that attract foreign capital. Chase-Dunn finds a significant correlation between specialization in mining and investment dependence and argues that "investment dependence has negative effects on production in agriculture and manufacturing but...has a positive effect on production in mining" (1979:147). The existing alliances including OPEC, appear to be committed to the goal of economic diversification of their members. As indigenous control over the economy increases, diversification is likely to increase. This suggests the following hypothesis:

HYPOTHESIS 2: Participation in OPEC positively effects the economic diversification of its members.

Dependency: The dependency model argues that resource specialization of the Third World countries enhances their dependence upon the core and MNCs. The literature describes numerous ways in which commodity specialization further facilitates MNC penetration and threatens economic autonomy of the LDCs. In Chapter Two I presented a detailed list of ways in which raw material specialization supposedly promotes economic dependency of the periphery. The historical evidence presented here suggests the coordinated policies of the exporting countries can keep dependency in check and control its impact. Thus, hypothesis 3 proposes the following:

HYPOTHESIS 3: Participation in OPEC inversely effects the economic dependence of its members.

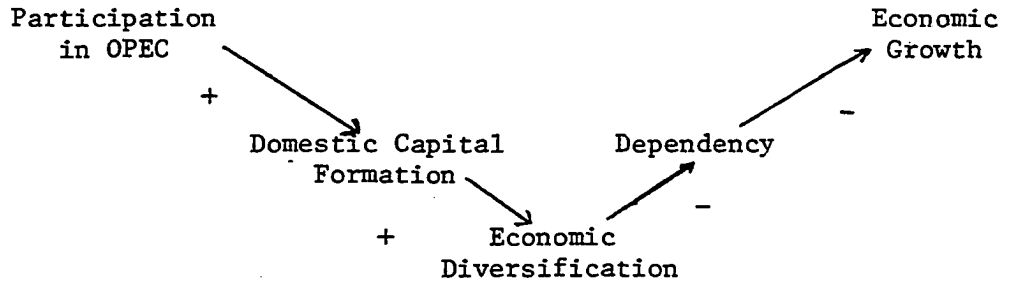
Economic Growth: Dependency studies have shown that economic dependence of the periphery upon the MNCs and the core negatively effects

their economic growth (Chase-Dunn, 1975; Mahler, 1979; Rubinson, 1979; Bronschier and Ballmer-Cao, 1979; Evans, 1979). One of the solutions to the problem of dependency, it is argued, is integrated efforts to coordinate policies among peripheral states (Rubinson, 1969), namely the establishment of EAs. The historical examination of EAs indicates that these organizations were efforts in that direction and some of them, like OPEC, appear to have been relatively successful.

HYPOTHESIS 4: Participation in OPEC positively effects the economic growth of its members.

The following diagram presents these four hypotheses as an integrated theory of the effect of participation in OPEC on economic growth. Participation increases domestic capital formation which leads to increased diversification. The increase in economic diversification reduces dependency which, in turn, increases economic growth.

Figure 1, Hypothesized Relationship for OPEC Alliance.



The next chapter deals with the question of measurement of the variables in Figure 1 and will present a brief discussion of the time series analysis which will be used to test the model.

Notes

1 - Chase-Dunn (1979), in discussing the structure of core periphery relations, briefly refers to "resistance from peripheries" in these relationships. He stops short of defining this concept and further exposition of the types of resistance, conditions under which they are likely to occur and their impacts on countries' economies. Chirot (1977) provides a descriptive analysis of revolutions in the periphery and their consequences for structural positions of LDCs. But, the world-system/dependency model still lacks a comprehensive causal model incorporating the periphery's anti-dependence movements which transcend national boundaries.

CHAPTER SIX

THE METHODOLOGY

This chapter, presented in three parts, is devoted to the formulation of the statistical model and some of the questions relevant to the macro-level studies of change. In the first part, some of the problems associated with using nation-states as the unit of analysis are discussed. The next part presents measures of the variables. Finally, a brief discription of the panel design method and the mathematical equations of the model are presented.

Problems of Quantitative Cross-National Studies

A transnational study is a hazardous adventure. It becomes more problematic when a mathematical presentation of concepts for temporal analysis of a number of LDCs is sought. Although various international agencies and some financial organizations are constantly improving the existing information, the problem of inadequate data remains.

One of the major problems facing research in this area is obtaining reliable statistical information. The dilemma is amplified by the time dimension which is integral to any study of structural changes that occur in slow pace over long period of time. Consequently, quantitative studies of change must systematically deal with problems arising from lack of reliable information over the desired time span.

Furthermore, systematic bookkeeping on economic activities or vital statistics is a relatively new and expensive endeavor. It demands human and capital resources that are products of a sophisticated infrastructure. Then, studies of transnational inequality are plagued by underdevelopment itself because economically depressed areas are also information poor.

In addition, any cross-national study must take into consideration the diversity of measuring systems in different countries. Although in recent years, due to the uniform techniques implemented by international organizations, this problem has been greatly reduced, as far as the historical data are concerned, measurement discrepancies persist.

This particular study, due to its subject matter and the limited number of OPEC countries, faces some added problems. OPEC was established in 1960 but to investigate its impact on members' economies the research design must include pre-1960 and post-1973 data for reasons specified in Chapter Three. This means a period of at least 20 years from 1955 to 1975. During this period, in addition to the establishment of OPEC, some other major structural changes occured in OPEC countries. Some lost their colonial status and became independent nation-states (e.g., Algeria and Gabon), and some experienced civil war, foreign invasion or revolution.

Here, I would like to raise a point ignored by other quantitative studies of dependency. These studies have consistently overlooked the significance of social upheavals and structural re-organizations like wars, revolutions, etc. in their samples. For instance, any empirical study of dependency that includes countries like Lebanon, El Salvador or Vietnam (current examples of violent upheavals) must at least acknowledge the possible impact of these events on the countries' national economies, even if they cannot be controlled statistically.

One predictable answer from the world-system/dependency perspective will be that spatial boundaries are artificial barriers, "one

of many political institutions used by classes to influence market forces in a competitive world economy" (Chase-Dunn, 1979:604, 1982). According to this argument any form of structural modification that occurs in the world-system is conditioned by the process of capital accumulation integral to the capitalist world economy. While this point is well taken, the fact remains that in cross-national research that uses nation-states as the unit of analysis one cannot deny the immediate impact of social upheavals on GNP, foreign investment, national loans, etc. Therefore, I acknowledge the fact that some of these changes occured in this sample though at the present stage quantitative models of change cannot control for them effectively. These events are added to other unobserved factors in disturbance parameters.

In addition, my search for statistical data on OPEC proved that this information is scarce. This fact is supported by the exclusion of OPEC countries from the previous major quantitative studies of dependency. Bronschier et al (1978) reviewed 17 dependency studies and list their samples. From the accumulated samples of these studies, four OPEC members (Saudi Arabia, Kuwait, Libya and Gabon) are absent altogether. Thus, I had to construct a research design to study the role of OPEC as a device of dependence-control based on the available information. Consequently, the measurements of some of the concepts, though internally valid, are different from those used in other dependency research.

Sources of Data

The major source of statistical information for this research is the "Cross National Socio-Economic Time Series, 1950-75" collected

by the World Bank and made available by the Inter-University Consortium for Political and Social Research, ICPSR (1979). However, this source proved to be less than complete for many LDCs, especially OPEC members; therefore, additional sources were used as follows:

The World Bank World Table, 1980
The United Nations, Statistical Yearbook
The United Nations Yearbook of Internationl Trade
The United Nations Yearbook of National Account Statistics, 1966
OECD, National Accounts of OECD Countries

When these sources failed to provide the required information for a desired year, an estimate was made by averaging the information for the year before and after that given period. For instance, 1955 manufacturing for Brazil and 1955 manufacturing and savings for Bolivia were calculated by averaging the information for 1954 and 1956, respectively. When this was not possible the closest year to a given period was chosen, for instance 1954 manufacturing for Mali and Egypt were used as 1955 data. Despite these schemes, there are still a few countries, (including some OPEC members like Kuwait and Saudi Arabia) that have missing values before 1960. Unfortunatley, even the monographic studies of these countries could not fill many gaps.

All the economic indicators utilized in the research were, originally, in current local prices. In order to obtain a uniform system, all local currencies were transferred to the U.S. dollar by using "annual average values of national currency units per U.S. dollar" (ICPSR, 1977). Then it was necessary to control for the effect of level of inflation on the outcome of the analysis. Therefore, GNP Implicit Price Deflators (index 1972) (Business statistics, 1979) were used to deflate the indicators.[1]

The Sample: The study design for this research requires a sample of LDCs. The conventional criteria for detecting underdevelopment are GNP per capita, doctors per capita or KWH electricity per capita. But, the scarcity of information generated added restrictions for this research. Therefore, the practical criterion was the availability of the required information for the given periods. However, the sample seems quite representative of LDCs. There are poor LDCs as well as a few richer ones.

Time-Series: The quantitative section of this research focuses on the impact of OPEC participation on economic growth of its members. Therefore, the research design must analyze the economic structures of the members as well as non-members before the establishment of OPEC as well as after its operation. The four founding members (see Chapter Three) organized OPEC in 1960 and were later joined by other full-time members. Some, like Gabon and Ecuador, joined as late as 1972 and 1973. Since its establishment, OPEC has had a great impact on the petroleum market, and oil exporting countries, whether members or not, have been influenced by its price-setting techniques. Thus, one can assume that even the newer members were not immune from OPEC's impact.

This study utilizes the time-series measurement of concepts for 1955, 1960, 1965, 1970 and 1975. This temporal sequence has two features:

1. it is long enough for the structural changes to occur; and,
2. makes possible comparison of the OPEC era with the previous years.

Following is the List of Countries in the Sample With Their GNP per Capita in 1977**

*Algeria	1110	Mali	117
Argentina	1874	Malta	1868
Barbados	1774	Mauritanius	746
Bolivia	476	Mexico	1164
Brazil	1411	Morocco	608
Burma	137	Nicaragua	855
Columbia	762	*Nigeria	513
Costa Rica	1393	Pakistan	201
Cyprus	1774	Panama	1195
+Dominican Republic	841	Paraguay	747
*Ecuador	819	Peru	721
Egypt	342	Philippines	458
El Salvador	589	Rhodesia	458
*Gabon	3186	*Saudi Arabia	7233
Gambia	208	Sri Lanka	162
Guatemala	830	Sudan	334
+Guyana	520	+Surinam	1874
+Haiti	230	Tanzania	210
Honduras	424	Thailand	426
Hong Kong	2623	+Trinidad & Tobago	2623
+India	158	Turkey	1060
*Indonesia	319	Uganda	31
*Iran	1227	Uruguay	1449
*Iraq	1566	*Venezuala	2625
+Jamaica	1060	Zaire	206
Kenya	294	Zambia	458
Korea	977		
*Kuwait	12686		
*Libya	6516		
Malawi	154		
Malaysia	971		

Source: The World Bank, 1980

* OPEC members

\+ IBA members

** Measured at current market price in U.S. dollars

Measurement of Concepts

Capital Formation: Chapter One contains a theoretical exposition of this concept as well as other concepts central to the political economy of growth. The discussion about domestic capital formation started with Adam Smith's notion of "previous accumulation" and Marx's idea of "primitive accumulation." It refers to the expropriation of surplus produced in the African, Asian and American countries by the Europeans as an effective impetus for the rise of capitalism, (Marx, 1973). This idea, later incorporated into the dependency model, argues that profit and remittance returned to the foreign capital from the peripheral areas drain the surplus essential for domestic capital investment and, thus, perpetuate external dependency. In this paper it is suggested that integrated policies for price stabilization lead to the inflow of foreign currency, supplying the domestic economy with an unrestricted source of capital. In the paper, domestic capital formation is measured by the ratio of gross domestic saving[2] to GNP.

Economic Diversification: This research is oriented toward the effects of single commodity production on economic growth of Third World countries. This issue has been one of the central questions in the literature of political economy and has been addressed by empirical as well as historical investigations. Despite these attempts, the question is not yet resolved, and the debate over negative impacts of a primary oriented economy continues. Here, it is suggested that when resource exporting countries increase their capital gain due to their concerted efforts, they have the potential to finance independent industrialization and expand their processing capacity. Economic diver-

sification is measured by GDP from manufacturing as a percentage of GDP.

Dependency: Dependency is an international process that permeates peripheral areas and as a consequence not only restructures their economic production but also reorganizes their social systems and leads to reorientation of their cultural perspectives. There is a general consensus in the literature that dependency is a multi-deminsional process, and research, both at theoretical and operational levels, reflects this consensus. Attempts to investigate different aspects of dependency have created numerous measures of economic dependency (see Bronschier et al, 1978) as well as varied indicators of social and cultural dependency (Evans, 19; Mahler, 1980). For the purpose of this study, available data permit the use of two indicators of economic dependence. The first measure is trade dependence, calculated by the ratio of value of export to GNP, indicating the extent to which a peripheral economy is externally oriented (Mahler, 1980; Rubinson, 1979). It is argued that export oriented economies are more dependent than those oriented toward internal consumption. Furthermore, commodity production makes peripheral areas vulnerable to trade dependency first and foremost among the forms of dependency (see Chapter Two).

The second indicator measures financial dependency. Financial dependency is the ratio of gross national investment to gross national savings[3]. Financial dependency occurs when $\frac{I}{S} > 1$, indicating a gross investment that surpasses the accumulated local capital. In this case the additional investment is financed by external sources either in the form of loans or direct investments. When I/S = 1.0 then it can be said

that the accumulated national saving is invested inside the country in toto. If I/S < 1.0, then either part of national savings is invested abroad or allocated for puroses other than investment. OPEC countries generally are accused of investing their increased financial capital abroad. It is also suggested that the ruling groups in these countries expropriate some of the national capital gain for their personal accounts and personal investments abroad. In any case, a ratio smaller than 1.0 shows that the country is exporting financial capital (Turner, 1982).

Financial dependency reveals the same aspects of disequilibrium in the balance of payment as foreign debits and stocks of foreign investment. The latter are more specific as to the types and amounts of the penetration, while the former is more suitable for investigating a unique group of countries like OPEC members. As commodity exporters, OPEC countries may be trade dependent, but as the members of an effective EA they can be financially independent.

The process of capital accumulation in the world economy, while adding unconquered areas to the list of periphery, perpetuates the marginal status of the old periphery. The central proposition in this paper suggests that hegemonic attempts of the core for peripheralization of the Third World countries are met with continuous resistance from these societies. In the previous chapters, I presented historical evidence suggesting that united actions by the periphery function as a mechanism of dependence control. If the suggested hypothesis is supported, then there will be an empirical ground for justifying this

assumption. In other words, while OPEC members may be trade dependent as commodity exporters, they might be financially independent as members of an EA. Thus, they have managed to redirect one of the aspects of international dependency. In sum, as I/S approaches 1.0, then the country is less dependent.[4]

Economic Growth: Chapter Two, by drawing on sociological and economic studies of dependency, describes a process by which raw material specialization effects economic growth of the exporting countries. In quantitative studies of dependency, change in GNP per capita is established as the conventional measure of economic growth. Here, I utilize its rate of change from 1955 to 1975 to test the impact of OPEC membership on economic growth.

Panel Design

The cross-sectional analysis prevalent in social sciences, including sociology, presupposes stable causal relationships among proposed concepts. Such a model fails to account for reciprocal causation and structural changes that occur over long period of time. The need for a dynamic formulation of feedbacks and cycles, on the one hand, and the causal processes of social change on the other hand, has increased the use of intertemporal analyses, such as panel design and multiple time series (Hannan & Young, 1977; Hannan, 1979). One way to model change in continuous variables is to look at this change in the context of a differential equation, where the rate of change in a variable is seen as a function of that variable and other variables. For example:

$$\frac{dy}{dT} = \alpha_1 + B_1Y(T) + B_2X(T) + B_3Z(T)$$

where the rate of change in y is a function of Y plus other variables.

One of the major problems of a two-way panel design is the auto-correlation of error terms over time which creates biased estimates of parameters. One of the accepted solutions to this problem is pooled cross-sectional analysis in which lagged variables are pooled into a single model. This method permits the researchers to use all NT observations simultaneously, (where N represents the number of cases and T represents the number of time periods). As compared with separate time-series analysis that generates TN separate outcomes, the pooling method yields a single regression coefficient that contains variations both in N cross-sections and T observations (Hannan and Young, 1977).

The pooling method is applicable when the underlying causal structure among the variables remains constant over the period of observation; otherwise, either separate time-series analyses or pooling the lag periods with identical causal structures, are more appropriate methods. Pooled cross-sectional analysis has other advantages. For instance, it is more efficient than other methods of temporal analysis. It generates one final model from multi-wave designs indicating the overall causal relations. In other words, instead of comparing separate analysis for different lag periods, one model summarizes the dynamics of the entire causal structure. Furthermore, by employing country times as the unit of analysis, a pooled panel design increases the number of units in the analysis (Hannan and Young, 1977; Chase-Dunn, 1982).

For the purpose of this research a separate analysis for each pair of periods is first conducted. This strategy can reveal unpredictable inconsistencies, if any, in the proposed pattern of causal struc-

ture. After checking for such a change in causal relationship I will proceed to construct pooled equations for those time periods with the same causal structure .

Equations: Pooled cross-section equations are usually formulated in two forms, (a) differential equations and (b) estimation equations or integrated equations. Both forms are presented below.

Four equations are needed to represent the arguments presented earlier in the paper;

Equation 1:

Equation (a) $$\frac{PGNP(T)}{dT} = \alpha + B_{11}PGNP(T) + B_{12}DEP(T) + B_{13}DIV(T) + B_{14}CF(T) + B_{15}OPEC(T) + E_1$$

Equation (b) $$PGNP(T) = \alpha + B_1PGNP(T - \Delta T)B_{12}DEP(T - \Delta T) + B_{13}\Delta DEP(T- \Delta T, T) + B_{14}DIV(T - \Delta T) + B_{15}\Delta DIV(T - \Delta T, T) + B_{16}CF(T - \Delta T) + B_{17}\Delta CF(T- \Delta T, T) + B_{18}OPEC(T) + E_1$$

where PGNP = per capita GNP, DEP = Dependency, DIV = economic diversification and CF = capital formation.

Equation 2:

(a) $$\frac{dDEP(T)}{dT} = \alpha + B_{21}DEP(T) + B_{22}DIV(T) + B_{23}CF(T) + B_{24}OPEC(T) + E_2$$

(b) $$DEP(T) = \alpha + B_{21}DEP(T - \Delta T) + B_{22}DIV(T - \Delta T) + B_{23}\Delta DIV(T - \Delta T, T) + B_{24}CF(T - \Delta T) + B_{25}\Delta CF(T - \Delta T, T) + B_{26}OPEC(T) + E_2$$

Equation 3:

$$\text{(a)}\quad \frac{dDIV(T)}{dT} = \alpha + B_{31}DIV(T) + B_{32}CF(T) + B_{33}OPEC(T) + E_3$$

$$\text{(b)}\quad DIV(T) = \alpha + B_{31}DIV(T - \Delta T) + B_{32}CF(T - \Delta T) + B_{34}\Delta CF(T - \Delta T, T) + B_{35}OPEC(T) + E_3$$

Equation 4:

$$\frac{dCF(T)}{dT} = \alpha + B_{41}CF(T) + B_{42}OPEC(T) + E_4$$

$$CF(T) = \alpha + B_{41}CF(T - \Delta T) + B_{42}OPEC(T) + E_4$$

The first equation expresses the impact of exogenous and endogenous variables on the rate of economic growth. Since OPEC is a dichotomous variable it refers to membership and non-membership. Equation 1 includes all variables. The second equation treats dependency as the dependent variable and is to test the impact of EA (OPEC) membership on dependency. It will test the rate of change in two forms of dependency. Equations 3 and 4, respectively, treat economic diversification and capital formation as dependent variables. This descending pattern of equations can reveal the effect of EA participation on the processes of development. Each equation (from lower 4, to upper 1) reflects the gradual and accumulative effect of the independent variables.

The next chapter describes the quantative analysis of the model.

Notes

1 - This method of conversion does not reflect the purchasing power of the local currencies and its use can be misleading. A recent study conducted by the joint commission of the World Bank and the UN called, United Nations' International Comparison Project, tries to solve problems of currency comparison. It presents comparison of real gross domestic product per capita and the purchasing power of currencies with 1970 reference date. (Karvis, et al. 1978:3) This project is in its second phase and offers these information for only a limited number of countries.

2 - Gross domestic (national) saving "shows the amount of gross domestic capital formation finances from the nationa's output. It is calculated as the difference between gross domestic investment and the deficit on current account and therefore include capital consumption allowances. It is composed of public and private saving" (ICPSR, 1979:8).

3 - Gross domestic investment measures the outlays for the addition of reproducible capital goods to the fixed assets of private and public enterprises, private nonprofit institutions, and general government and the value of the net increase or decrease, in inventories. This category includes all new items produced domestically or purchased from abroad, as well as all imported second hand goods. It also includes all new dwellings, expenditure on the improvement of durable goods and non-reproducible tangible assets, and additions to livestock herds (ICPSR, 1979:8).

4 - It must be pointed out that the starting point for I/S = 1.0 might be from .5 or 1.5. In other words, I/s can be < 1.0 or > 1.0 at time

T - 5 and equal 1.0 at time T. When $I/S > 1.0_{(T-5)}$ and reaches 1.0 at a later time, it represents a reduction in degree of financial dependency. But if $I/S < 1.0$ at a later time, it shows that the country was a capital exporter at the starting point but, now it is financially self-sufficient without significant investment abroad. This study did not take these trends into account, but in future studies a dummy variable with 3 or more categories (A, $I/S > 1.0$; B, $I/S = 1.0$; $I/S < 1.0$) will account for these changes.

Chapter Seven

RESULTS

This chapter in two parts presents a quantitative analysis of OPEC participation and its impact on economic growth of member countries. The first part presents results of multiple regression for a cross-sectional study of OPEC participation. Results of pooled time-series and lag coefficients are discussed in the second part, (Appendix 1 contains a discussion of differential equation models).

Cross-Sectional Analysis of OPEC Participation

Table 1 contains yearly regression coefficients for a cross-sectional analysis of the 1975 data (see Appendix 2 for other periods), estimating the following types of equations:

$$PGNP_{1975} = bCF_{1975} + bDIV_{1975} + bDEP_{1975} + E \qquad (5)$$

The breakdown of the effects of OPEC on endogenous variables in Table 2 and path diagram in Figure 2 provide confirming evidence for some, but not all, of the hypotheses.

As the results indicate, OPEC participation contributes to domestic capital formation. This is reflected in a B of +.610 which is the direct effect of OPEC membership on capital formation. This is consistent with the hypothesized relationship discussed in Chapter Four.

Taking economic diversification as the dependent variable, it was predicted that OPEC membership, through increased domestic capital, would lead to economic diversification of member countries. The direct effect of capital formation on diversification is .077 which is not significant, but positive as expected. The same holds true for the indirect effect of +.048 (see Table 2) of OPEC on diversification which

Table 1: Results of Cross-Sectional Analysis for All Hypotheses, 1975

Independent Variables	b	Stand.Error	B	P
		Capital Formation		
OPEC	.292	.051	.610	.0--
Multiple R = .372				
		Economic Diversification		
OPEC	-.078	.029	-.427	.008
CAP FOR	.029	.059	.077	.6
Multiple R = .148				
		Export Dependency		
OPEC	.012	.989	.017	.9
CAP FOR	.847	.196	.589	.0--
DIV	-.334	.438	-.088	.4
Multiple R = .387				
		Financial Dependency		
OPEC	2.979	1.739	.280	.09
CAP FOR	-12.311	3.411	-.555	.0--
DIV	- 2.793	7.705	-.048	.7
Multiple R = .199				
		Economic Growth		
OPEC	235.776	393.264	.081	.5
CAP FOR	4079.003	991.434	.668	.0--
DIV	416.641	1705.817	.026	.8
FIN DEP	132.612	538.163	.031	.8
EXP DEP	18.819	30.572	.068	.5
Multiple R = .508				

Where: CAP FOR = Capital Formation
DIV = Diversification
FIN DEP = Financial Dependency
EXP DEP = Export Dependency

Table Two

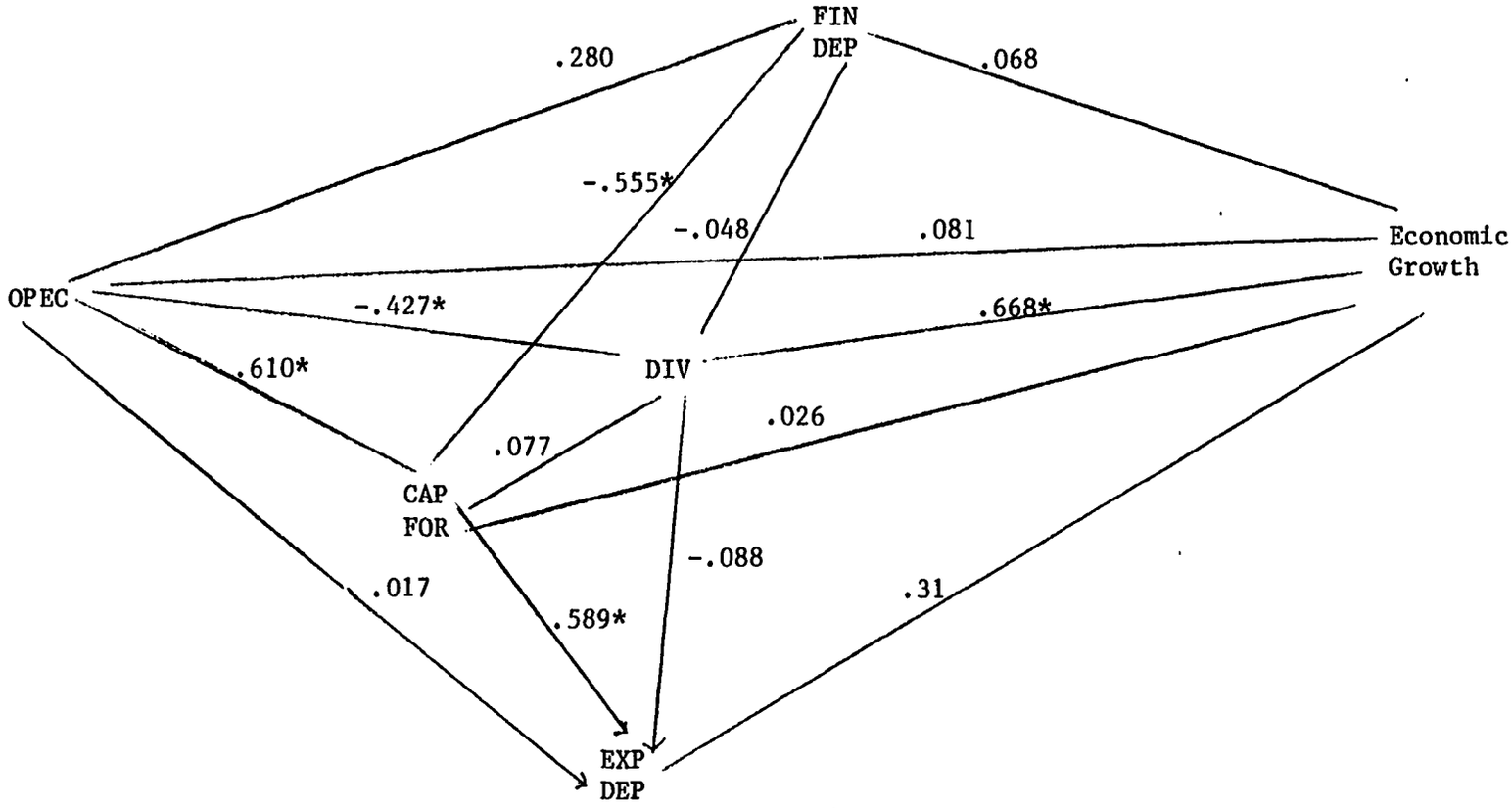
Decomposition of the Effects of OPEC

into

Total, Direct and Indirect Effects

Effects of OPEC on	Total	Direct	Indirect
Capital Formation	.610	.610	----
Diversification	-.379	-.427	.048
Export Dependency	.409	.017	.392
Financial Dependency	-.040	.280	-.320
GNP per Capita	.488	.081	.407

Figure 1: Path Design, Effects of OPEC on Endogenous Variables, 1975



* P ≤ .01

Where: CAP FOR = Capital Formation
DIV = Diversification
FIN DEP = Financial Dependency
EXP DEP = Export Dependency

is positive, but very small relative to OPEC's direct and total effects. This small positive indirect effect of OPEC on diversification is offset by the negative direct effect of -.427 of OPEC on diversification, resulting in a total effect of -.379. Although the positive indirect effect is the test of the hypothesis, its small size relative to the inverse direct (and significant) effect fails to support the second hypothesis. The unexpected inverse total effect of OPEC on economic diversification is almost all direct, and capital formation fails to play the role of a significant internvening variable.

With respect to external dependency, it was suggested that OPEC participation, by increasing domestic capital, promotes economic diversification which, in turn, reduces dependency. The two measures of dependency are financial and export dependency. The 1975 results show that the signs of direct effects of capital formation (B = -.555) and economic diversification (B = -.048, not significant) on financial dependency are consistent with the earlier arguments. It was expected that the total effect of OPEC on financial dependency would be negative and primarily indirect through diversification. But the variable having the strongest direct effect is capital formation. These coefficients generate an indirect effect of -.320 of OPEC on financial dependence. There is, however, a positive direct effect of .280 of OPEC on financial dependency which was not anticipated and which tends to offset the inverse indirect effect. Given the direction of the direct and indirect effects, OPEC participation overall seems to have no effect on financial dependency, since the total effect of -.040 is not significant.

The direct effect of economic diversification on export dependency (B = -.088) is insignificant, but in the anticipated direction. However, the positive direct effects of OPEC (B = .017) and capital formation (B = .589) on export dependency are contrary to our prediction. As Table 2 shows, the effect of OPEC on export dependency is more indirect (.392) than direct (.017) and the large indirect effect is positive, contrary to expectations. This occurs primarily through capital formation which has a positve direct effect (B = .589) on export dependency. It would seem, then, that domestic capital is channelled into export, leading to higher export dependency among LDCs.

Treating economic growth as the dependent variable capital formation again, has the strongest direct effect (B = .668) significant beyond .001. The direct effects of other variables on per capita GNP are positive, but not significant. Of these, the positive signs of the effects of financial (.031) and export dependency (.068) on per capita GNP are problematic within the dependency model framework. These coefficients are also contrary to the hypothesized relationships, i.e., the prediction of an inverse effect of dependency on economic growth. Overall, the positive total effect of .488 of OPEC on GNP occurs primarily indirectly (.407) through intervening variables in the model.

In general, therefore, the results of cross-sectional analysis support the proposition that OPEC participation helps members increase their surplus capital. For economic diversification, the regression analysis yields contradictory results, prohibiting any conclusive statement at this stage of the research. Hypothesis 3 is partially supported, indicating that OPEC participation reduces financial dependency through

increased capital formation. But this tendency is offset by a positive direct effect of OPEC participation on financial dependency. As far as export dependency is concerned, the regression analysis fails to support part of the hypothesis 3. These findings indicate that OPEC directly and indirectly, promotes export dependency which, in turn, increases GNP per capita. The results for GNP per capita are consistent with the hypothesized relationships, indicating that OPEC membership leads to increased per capita GNP, but not necessarily through the processes proposed earlier.

These regression coefficients are indicators of static relationships between various components of this model. Static models of association, though suitable for cross-sectional studies independent of time effects, are inadequate tools for a dynamic model like the one proposed here. In the following section a discussion of the pooling method is followed by the results of the lag equations.

Longitudinal Analysis of OPEC Participation

Chapter Five presented a brief discussion of the pooled time-series technique used for temporal analysis of social processes. The pooled time-series method allows us to relax an assumption of ordinary least square (OLS) -- that the error terms are uncorrelated with each other and with the regressors. OLS tests the following types of equations:

$$Y = a + bX + E \qquad (6)$$

Specifically, one way to model the error structure in a dynamic model is as follows:

$$E = e_i + e_t + e \qquad (7)$$

Where e_i is the constant individual factor. It consists of the effects of unobserved variables that are constant for each individual case across time periods but vary across the cases. For instance, the geopolitics of each country is relatively stable over time, but varies among the cases in the sample. e_t refers to the error due to the time factor, i.e., factors that vary over time but are constant across the cases for any given period. Such an unobserved factor could be an economic boom or bust in the world economy affecting all countries. Finally, e is the well-behaved random error generally assumed in cross-sectional regressions.

Compared with cross-sectional models, the pooling technique has two advantages: (1) it yields dynamic equations appropriate for the study of social change, (2) it relaxes the assumption of well-behaved distrubances that is necessary for cross-sectional regressions. Models of OLS are based on the premise that all errors are random. The pooling technique assumes that error terms contain the effect of unobserved variables. Furthermore, error terms are assumed to be correlated with the regressors creating misleading results. The pooling method, through generalized least square (GLS), takes this error structure into account when calculating coefficients, (Rosenfeld, 1980; Durmond and Gallant, 1977).

Differences Between OLS and GLS: Perhaps the best way to introduce pooled cross-sections is to examine a simple example of GLS. The example I have chosen is GLS performed in response to first order autocorrelation of the distrubances. Autocorrelation means that observations of a variable over time are related. Thus, when there is high

autocorrelation, successive observations reflect the previous observation, generating little or no new information.

To solve this problem, we utilize GLS and construct the error structure:

$$e_t = Pe_{(t-1)} + V_t, \tag{8}$$

where, e_t = error term for equation at time = t

$e_{(t-5)}$ = error term for equation at time = t - 1

P = correlation of e_t and $e_{(t-5)}$

V_t = random error

This implies that:

$$V_t = e_t - Pe_{(t-1)} \tag{9}$$

Whenever, $Pe_{(t-1)} = 0$, the only disturbance left is random error. Since P is never known, it must be estimated. Generally known techniques are available for computing $\hat{P}$, an estimate of P. GLS transforms the data by multiplying equation #6 for time (t - 1) by $\hat{P}$:

$$\hat{P}y_{(t-1)} = \hat{P}a + \hat{P}bx_{(t-1)} + \hat{P}e_{(t-1)} \tag{10}$$

subtracting #10 from #6

$$y_t - \hat{P}y_{(t-1)} = a(1 - \hat{P}) + b(x_t - \hat{P}x_{(t-1)} + (e_t - \hat{P}e_{(t-1)}) \tag{11}$$

As a consequence, the GLS equation can be written as:

$$\Delta Y_t = a(1 - P) + b\Delta X_t + V_t^1 \tag{12}$$

where, $\Delta Y = Y_t - PY_{t-1}$

$\Delta X = X_t - PX_{t-1}$

In #12, V_t has all the properties of random error assumed by OLS. After the data are transformed by GLS, OLS can be utilized to regress y values on x values to estimate a + bx, (Wannacott and Wannacott, 1972:490-491).

Pooling Data: In the pooled time series technique a similar procedure is used to transform the data, so that OLS can be used to calculate the regression coefficients.

According to the notational system of matrix algebra, equation #6 of OLS can be expressed as:

$$b = (x'x)^{-1}x'y \qquad (13)$$

and equation #12 of GLS can be written as:

$$b = (x'\hat{V}^{-1}x)^{-1}(x'\hat{V}^{-1}y) \qquad (14)$$

where $\hat{V}$ denotes an estimator for the covariance matrix of the error terms, (Fuller and Battese, 1973).

The error structure can take on a more complicated form of:

$$U_{ij} = V_i + e_j + \varepsilon_{ij} \qquad (15)$$

Where V_i is the cross-country error, e_j is the time series error and ε_{ij} denotes a random disturbance. To estimate the variance components of the error structure, a series of OLS regressions are performed.

1 - The first OLS estimates the random error ε_{ij} by regressing $y_{ij} - \bar{y}_{.j} - \bar{y}_{i.} + \bar{y}_{..}$, on $\bar{X}_{ijk} - \bar{X}_{.jk} - \bar{X}_{i.k} + \bar{X}_{..k}$, where

Y_{ij} = value of dependent variable for country i at time j

$\bar{X}_{.j}$ = cross-sectional mean for time period j

$\bar{y}_{i.}$ = time series mean for country i

$\bar{y}_{..}$ = grand mean

and

X_{ijk}= values of independent variables for country at time t

$\bar{X}_{.jk}$= cross-sectional mean for time period j

$\bar{X}_{i.k}$= time series mean for country i

$\bar{X}_{..k}$= grand mean for independent variables

2 - The second OLS procedure estimates V_i by regressing $y_{ij} - \bar{y}_{.j}$ on $X_{ijk} - \bar{X}_{i.k}$.

3 - The third OLS yields e_j by regressing $y_{ij} - \bar{y}_{..}$ on $X_{ij} - \bar{X}_{i.k}$.

Results of these procedures are used to estimate the covariance among error terms, $\hat{V}$, and to transform the data. When $U_{ij} = \varepsilon_{ij}$, i.e., when the error term contains only random disturbances, OLS can estimate a and b.

This paper has used GLS estimators developed by Fuller and Battese (1974) which are incorporated into the SAS package by Drummond and Gallant, (1977).

Results of Pooling Method: Table 3 presents the coefficients from a GLS analysis of equations of the following type:

$$PGNP_{(T)} = B_1 PGNP_{(T-5)} + B_2 DEP_{(T-5)} + B_3 \Delta DEP_{(T-5,\,T)} + B_4 DIV_{(T-5)} + B_5 \Delta DIV_{(T-5,\,T)} + B_6 CF_{(T-5)} + B_7 \Delta CF_{(T-5,\,T)} + B_8 OPEC_{(T)} \qquad (16)$$

This is the same as equation 1b discussed in Chapter Five. Where:

$PGNP_{(T-5)}$ = lag of per capita GNP

$DEP_{(T - 5)}$ = lag of dependency
$\Delta DEP_{(T - 5, T)}$ = change term for dependency
$DIV_{(T - 5)}$ = lag of diversification
$\Delta DIV_{(T - 5, T)}$ = change term for diversification
$CF_{(T - 5)}$ = lag of capital formation
$\Delta CF_{(T - 5, T)}$ = change term for capital formation

Table 3 also shows various components of the error structure. For instance, treating capital formation (.0123), economic diversification (.0009), financial dependency (57.16) and export dependency (.0119) as the dependent variables, random errors are larger than error due to time or country variations. But, in the case of economic growth, country specific error, (180811.9), error due to unobserved variables that change across cases, is larger than other components. The GLS procedure has controlled for these factos in the calculation of the coefficients.

Pooled time-series analysis generally contains lag values as well as change terms of variables. The purpose of change terms is to control for those unobserved variances in X which are due to "time or individual" factors (Coleman, 1968). These values do not change the relationship among the variables, but "add extra information about the model" (Rosenfeld, 1981). The lag values are the estimators of the parameters, and change terms are included to produce efficient and unbiased estimators. In Figure 3 significant lag values are used to represent the relationships among the variables (except for the relationship between financial dependency and economic growth which is not significant, but occurs in the predicted direction).

The interpretation of metric coefficients in a pooled time-series table is slightly different from the interpretation of correla-

tion coefficients. Metric coefficients are not standardized and cannot be compared. Their interpretation then, is based on their signs and significant tests. Unlike path analysis, direct, indirect and common cause effects are not calculated, though, the effect of the independent variables on the dependent variable through intervening variables are considered. For example, the effect of OPEC on financial dependency is mediated through capital formation (10.9), and OPEC does not have a statistically significant relationship with financial dependency.

The dependent variable in a pooled time-series technique is the level of Y. For instance, OPEC membership contributes positively to the level of domestic capital formation at time t (b = .371, see Table 3). When economic diversification is the dependent variable OPEC membership (-.019) and the lag of capital formation (-.031) have negative impacts on the level of the dependent variable.

The results of these findings for the proposed hypotheses in Chapter Four are as follows:

Hypothesis 1: Participation in OPEC contributes to Capital formation within member countries.

The effect of OPEC on the level of capital formation is tested. A metric coefficient of b = .132 which is significant beyond .001, denotes that OPEC participation increases the level of domestic capital at time t. This coefficient supports the earlier argument that membership in an export alliance (OPEC) contributes to increased return on LDCs' commodity trade. As Tables 1 and 2 show, this hypothesis is also supported by the regression analysis.

Hypothesis 2: Participation in OPEC positively affects the economic diversification of its members.

Table 3: Modified Generalized Least Square Estimates

Independent Variables		Metric Coefficients	Stand.Error	P
		Capital Formation		
LAG CAP FOR		.371	.018	.0--
OPEC		.132	.027	.0--
E_i	.0025			
E^t	.0003			
e^t	.0123			
MSE	.0128			
Inter	.0944			
		Economic Diversification		
LAG DIV		.579	.054	.0--
OPEC		-.019	.107	.06
LAG CAP FOR		-.031	.026	.2
CHNG CAP FOR		.038	.019	.05
E_i	.0006			
E^t	.0000			
e^t	.0009			
MSE	.0010			
Inter	.0661			
		Financial Dependency		
LAG FIN DEP		- .133	.066	.04
OPEC		- .224	1.813	.9
CHNG DIV		- 3.514	13.920	.8
LAG DIV		-11.614	10.509	.06
CHNG CAP FOR		- 7.954	4.362	.06
LAG CAP FOR		-10.870	5.392	.04
E_i	8.002			
E^t	.294			
e^t	55.520			
MSE	57.160			
Inter	5.892			

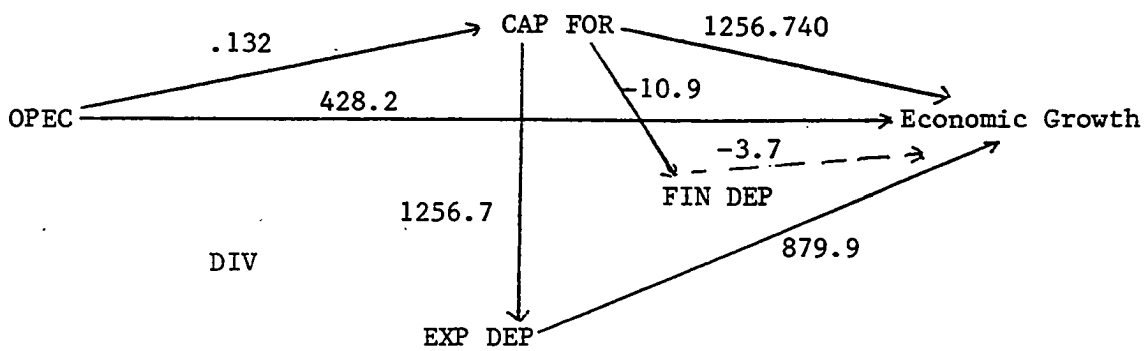
Table 3 continued...

Independent Variables		Metric Coefficients	Stand.Error	P
		Export Dependency		
LAG EXP DEP		.662	.063	.0--
OPEC		.051	.033	.1
CHNG DIV		.104	.224	.6
LAG DIV		-.045	.193	.8
CHNG CAP FOR		.337	.072	.0--
LAG CAP FOR		.252	.098	.01
E_i	.0039			
E_t	.0004			
e^t	.0119			
MSE	.0136			
Inter	.0662			
		Economic Growth		
LAG GNP per cap		.105	.027	.0001
OPEC		428.188	157.050	.006
LAG CAP FOR		1256.740	350.930	.0--
CHNG CAP FOR		1134.190	242.540	.0--
LAG DIV		56.263	813.800	.9
CHNG DIV		- 90.100	737.660	.9
LAG EXP DEP		879.948	283.470	.002
CHNG EXP DEP		69.200	220.500	.7
LAG FIN DEP		- 3.745	5.594	.5
CHNG FIN DEP		- 1.989	3.434	.5
E_i	180811.900			
E_t	20242.360			
e^t	107099.600			
MSE	120257.000			
Inter	-65.467			

Where: CAP FOR = Capital Formation
DIV = Economic Diversification
FIN DEP = Financial Dependency
EXP DEP = Export Dependency
CHNG = Change Term

Figure 3

Observed Relationships Among Variables



Where: DIV = Economic Diversification
CAP FOR = Capital Formation
FIN DEP = Financial Dependency
EXP DEP = Export Dependency

*P $\leq$ .05

Treating economic diversification as the dependent variable, the effects of OPEC membership and the lag of capital formation on the level of manufacturing are tested. It was hypothesized that surplus capital could be channelled into the secondary sector, providing LDCs with some degree of self-reliance. As Table 3 shows the effect of capital formation on diversification is negative (-.031) and not significant. The same holds true for the effect of OPEC on economic diversification (-.019).

A comparison between the metric and regression coefficients shows that both effects are negative, with only OPEC's regression coefficient being significant. The indirect effect of OPEC on diversification through capital formation also fails to provide any support for the second hypothesis. In fact, as Table 2 and Figure 3 show, economic diversification is not influenced by and does not have an effect on any variables of the model.

Hypothesis 3: Participation in OPEC inversely affects the economic dependence of its members.

It is necessary to make a distinction between the two measures of external dependency employed. It was suggested (Figure 1) that OPEC, through increased capital formation among its members, promotes economic diversification which reduces financial and export dependency.

Table 3 shows the effect of OPEC membership, the lag of capital formation and that of diversification on the level of financial dependency. As expected, these variables, all, have negative effects, but except for one, none of them are significant. The negative effect of diversification on the level of financial dependency is b = -11.614 which is not significant. The same holds true for the effect of OPEC

(b = -.224). The lag of capital formation has an expected negative effect of b = -10.870, which is significant at .05 level.

These findings are consistent with the earlier agrument, and except for one, also with the results of regression analysis. The surprising difference is in the negative effect of OPEC on the level of financial dependency in the pooled -time series analysis. As indicated earlier, the regression analysis showed that OPEC has a positive direct effect (.280, see Table 1). Although none of these coefficients are significant, the regression coefficient came closer to being significant.

One must note that the regression coefficient only captures the 1975 relationships, whereas pooled time-series is a longitudinal analysis of the relationships over a 20-year period. Thus, it follows that OPEC may have a positive effect on the 1975 financial dependency, but generally a negative impact over longer period of time.

In short, the results indicate that OPEC membership increases capital formation (.132) which, in turn, reduces financial dependency. Therefore, OPEC's effect is not through diversification as hypothesized earlier but through capital formation.

The second measure of external dependency is export dependency, argued to be an indicator of the resource-exporting economy of LDCs (see Chps. 1 & 2). It was anticipated that OPEC membership, by promoting diversification, would reduce export dependency. The effect of the lag of diversification on export dependency is, as expected, negative but not significant (b = -.045). OPEC membership (b = .051) and the lag of capital formation (b = .252, significant) contribute positively to the level of export dependency, but the effect of OPEC is not significant. The posi-

tive signs of these coefficients are contrary to the hypothesized relationships but consistent with the results of the regression analysis.[2] As stated earlier, the cross-sectional analysis showed that OPEC and capital formation have positive direct effects on export dependency. The positive effect mainly occurs through capital formation, not diversification. In other words, OPEC membership increases domestic capital (.132) which, in turn, results in a higher level of export dependency. Thus, it seems that the increased capital is not channelled into diversification projects but, as the dependency theorists argue, reinvested in the exporting sector, thus intensifying their export dependency. In short, these findings do not support the expected reduction in export dependency. The results seem to split hypothesis 3 into parts, supporting it only partially.

Hypothesis 4: Participation in OPEC positively affects the economic growth of its members.

This hypothesis, through different intervening process, is supported by the results. It was suggested (Figure 1) that OPEC participation, by promoting economic diversification, reduces dependency which, in turn, contributes to economic growth. The results show that diversification has the predicted positive but not significant effect (b = 56.26). The positive effect of OPEC on per capita GNP occurs directly -- b = 428.18, significant beyond .01 -- and indirectly through an unexpected intervening process. OPEC membership increases domestic capital (.132) which, in turn, raises the level of per capita GNP (b = 1256.74). Capital formation also indirectly contributes to economic growth through export dependency (b = 879.95). Financial dependency shows, as expected, a neg-

ative but not significant effect on GNP (b = -3.75). There is a positive and significant effect of export dependency on GNP (b = 879.95) which is problematic in the dependency model framework. In contrast to the dependency theorists' arguments, the results show that the lag of export dependency in LDCs contribute to their level of growth. Overall, the results of pooled time-series analysis support Hypothesis 4.

Generally, therefore, the longitudinal analysis supports Hypothesis 1, suggesting that OPEC participation can lead to accumulation of domestic capital. Hypothesis 4 also, through a different intervening process, is supported. The impact of OPEC on economic diversification has consistently been negative, leading to the conclusion that Hypothesis 2 is not supported. Hypothesis 3 is partially supported, indicating that OPEC membership, through increased domestic capital, may reduce financial dependency. Furthermore, it was revealed that domestic capital mediates the effects of the OPEC variable on the endogenous variables. The major implication of OPEC participation is the ability to retain surplus capital inside the exporting countries. Then, it is basically through this accumulated capital that the other aspects of the economy, such as export and financial dependency or growth of GNP per capita are effected and perhaps modified.

These findings have some consequences for the dependency and the neoclassical economics models. They provide support and sometimes challenge some of the underlying assumptions of the two models. The positive effect of OPEC on capital formation suggests that resource exporting countries may be able to increase their capital gain by organizing export alliances. This raises a question about the dependency

model's assumption that resource specialization and world market participation drain surplus capital from LDCs to the core.

The negative impact of OPEC participation on economic diversification supports the dependency theorists' argument regarding the adverse effects of raw material specialization. According to a major premise of the dependency model, hegemonic power of the core and MNCs over sources of technology and operation of the industrial market inhibits the periphery's attempts for participation in that market. Furthermore, it is argued that as the capitalist world-system becomes more dominant and incorporates new areas, it consolidates economic specialization of the periphery. Although the type of specialization is changing and some forms of industrial production are assigned to the periphery (e.g., textile), the consequences for the LDCs remain the same (Chase-Dunn, 1979). Given these assumptions, one can conclude that, while OPEC countries have managed to retain some of the surplus capital produced in their countries, they have not been able to utilize this capital to reduce their dependency on petroleum.

There is, however, another factor to be considered, i.e., measurement of the concept. This research employed manufacturing as a percentage of GDP as the indicator of diversification. As it is pointed out in Chapter Five, data measuring the industrial capacity of the LDCs, particularly OPEC members, are scarce. But there are recently some indications that percentages of the labor force employed in the industries of OPEC countries are increasing (see Table 4). Furthermore, after establishment of the OPEC, member countries have become actively involved in the downstream activities of the industry such as refining and manufacturing of petroleum products (Danielson, 1982; see also Ch. 3). Therefore, future

Table 4: Percentage of Labor Force in Industry of OPEC Countries

Country	1960	1970	Most Recent Estimate
Algeria	12.1	14.6	18.0
Ecuador	13.0	13.0	14.7
Gabon	7.2	8.4	----
Indonesia	8.4	9.7	12.0
Iran	23.3	28.2	32.0
Iraq	18.3	22.0	25.0
Kuwait	34.1	34.4	43.0
Libya	16.4	21.9	27.0
Qatar	9.7	11.7	14.0
Nigeria	10.4	13.8	18.0
Venezuela	22.2	24.9	27.0

Source: World Bank, World Table, 1980

studies employing more recent and comprehensive information may reach different conclusions.

The results for financial dependency show that OPEC participation through increased domestic capital reduces financial dependency which, in turn, may lead to economic growth. These conditions challenge the dependency model's argument that primary specialization, specially extractive industries, attracts foreign capital leading to external dependency and underdevelopment. These findings also raise a question about neoclassical economists' argument that capital, irrespective of its origin, promotes production, increases jobs and expands local markets. These findings, rather, give some indications that OPEC participation limits foreign capital penetration and may promote growth (referring to the negative but insignificant effect of financial dependency on per capita GNP).

The results for export dependency are consistent with the dependency theorists' argument that increased return on raw materials is reinvested in the export sector at the cost of draining other aspects of economy. This is also congruent with the negative impact of OPEC on diversification (in the cross-sectional analysis only), denoting that surplus capital is directed to the commodity producing sector rather than to diversification projects. Thus, an overview of the results for export dependency and diversification suggests that OPEC participation has not led to economic diversification and thus, has not reduced these countries reliance on the export of raw material as their major source of income.

These findings also suggest that resource exporting countries which form an EA can attain higher levels of per capita GNP despite their specialization in extractive industries. This is contrary to an assumption of the dependency model that specialization in extractive industries is, in general, detrimental to economic growth (see Chapter One and Two). The positive and significant effect of export dependency on per capita GNP is particularly problematic in the framework of the dependency model. While challenging the dependency model, the positive effect of export dependency on growth furnishes some support for neo-classical economics' position on the advantages of international trade.

In the next chapter I will address some of these questions more specifically, and draw a general conclusion from the combined results of the historical and quantitative analyses of export alliance participation in the world economy.

NOTES

1 - The computation formula for this equation is:

$$b = \frac{\varepsilon(X_t - \hat{PX}_{(t-1)})(Y_t - \hat{PX}_{(t-1)})}{\varepsilon(X_t - PX_{(t-1)})^2}$$

2 - The measure of export dependency is value of export as a percentage of GNP. The value-oriented nature of this indicator might have contributed to the high level of export dependency. This measure is effected by increase in price of oil which has been greater than increase in the volume of export. The same holds true for economic diversification measured by the value of GDP from manufacturing. A measure consisting of quantity of these indicators (unavailable for this research) can control for the effects of price-oriented variables.

CHAPTER EIGHT

DISCUSSION

This research addresses a major dilemma of underdevelopment, namely, primary specialization. This notion, which is central to the operation of the capitalist world economy, is frequently addressed by the neoclassical economists and responded to by the dependency model.

Adam Smith in his "Wealth of Nations" elaborates on the advantages of specialization, division of labor and foreign trade. Following his theoretical framework, the neoclassical economists have generally emphasized the importance of comparative advantage, referring to specialization in production and export of commodities in which a country is relatively most efficient. This process of specialization results in the division of labor at the global level. Free trade as an efficient way for exchange of goods at the international level guarantees maximum return on factors of production, including labor force (Samuelson, 1973; Gwartrey and Stroup, 1980). This approach which emphasizes the merits of the "invisible hand," opposes protection policies as self-defeating. This model maintains that countries are blessed with diverse natural and social resources, making them more efficient in production and distribution of some commodities and less efficient in others. It pays for countries to specialize in those products in which they have the greatest comparative advantage and exchange them for other goods. International trade need not be limited to commodities and can include factors of production such as labor, capital, etc. Thus, free investment of capital not only maximizes profit but also stimulates the host economy, diffuses technology, creates jobs, etc.

To this theory, the dependency model responds that a trading relationship between an underdeveloped, primary producing country and a developed, industrialized country is not an exchange between two equal partners. This model maintains that free trade and the international division of labor result in resource specialization by LDCs. Raw material specialization gears economic activities of the periphery to those products destined for the core. These activities tend to monopolize capital and other resources, leading to economic stagnation of other sectors. The resulting export economy is conditioned by the international market, core's policies and MNCs' profit motives. The outcome of this process for the resource exporting countries are perpetual underdevelopment and external dependency.

The dependency model originated in Third World countries as a response to their economic problems which, despite international aid and an influx of foreign capital, continue to persist. This model questions the merits of comparative advantage for the primary producing countries. A series of empirical studies also provides evidence contrary to the promises of free trade and international specialization.

However, the dependency model, by emphasizing the integrating power of the world-system, overlooks the periphery's resistance to external domination. The overall picture as portrayed by this model shows the periphery trapped in a self-defeating cycle of incorporation and exploitation, (except Chase-Dunn's brief reference to these activities, 1978 and 1979). In general, dependency theorists have overlooked LDCs' need for commodity production and international trade, whereas the urgency of this question is a serious challenge to the concerned leaders

and the intellectuals in Third World countries.

In contrast to the dependency theorists, neoclassical economists have generally supported developmental policies derived from the principle of comparative advantage. Economic advisors in international financial organizations -- IMF, World Bank -- still encourage raw material production and generally refrain from supporting diversification goals (World Bank, 1980).

The capitalist world economy exposes the periphery to the difficult challenge of participation while avoiding exploitation. The difficulty of total withdrawal (e.g., Cambodia) forces LDCs to a tactful game of participation, withdrawal and negotiation. One such tactic is the organization of export alliances among the commodity exporting countries. There are, of course, other means frequently employed by the periphery like tariff policies, regulation of MNCs' activities and anti-imperialist revolutions, etc., (c.f., Chase-Dunn, 1978).

EAs resemble collective attempts on the part of exporting countries to resist domination and economic dependence. These organizations (1) can increase the bargaining power of the producing countries; (2) can reduce price fluctuation in the commodity market; (3) can control production output, (4) can function as a forum for the exchange of information, and (5) can support members against possible threats from the core and MNCs. In short, EAs are manifestations of the periphery resistance and mechanisms of dependence control.

EAs' success most likely varies with respect to the characteristics of the commodity, type of the market and homogeneity of the producers. Chapter Two lists some of these conditions. The most success-

ful EA and the pioneer in this field, OPEC, has had by far the highest degree of success among the EAs. It must be stressed that success of OPEC is largely due to the special nature of petroleum and the type of relationship among the major exporting countries (see Chapter Three).

The results of the quantitative analysis revealed that OPEC members have significantly increased their level of domestic capital gain. But only a small fraction of this new capital is channelled to finance economic diversification. In other words, OPEC countries have not successfully utilized their financial resources for economic self-sufficiency and for reducing their reliance on petroleum.

In the framework of the dependency model, attempts at maximizing income from commodity export are viewed as short term strategies with long run dependency outcomes (Stokes and Jaffee, 1982). Generally, these attempts are considered to be cosmetic without a substantial impact. The dependency model may view these policies as:

1. Short run, with no permanent ramification for structural change,
2. Dead-end as developmental policies,
3. Dominated by LDCs' elite and mainly beneficial to them,
4. Merely a source of increased revenue for DCs through the sale of goods or armaments to LDCs.

This research is not designed to answer all these charges. Rather it evaluates a developmental policy born out of historical processes as a response to unfair market arrangements. However, the results of this study support dependency theorists' suspicion that increased capital

does not result in industrialization.

Then a question arises: has OPEC brought anv structural change to the member countries? Any satisfactory answer to this question requires a longer time period and more comprehensive statistical information on various economic sectors of the member countries. There are some indications, like an increased percentage of the labor force in industry (OPEC Bulletins, World Bank and U.N. estimates) suggesting that the secondary sectors in OPEC countries are expanding, though it was not possible to measure that expansion in this paper.

However, if "structural change" refers to industrialization, the answer is negative. But to make development synonymous with industrialization, the answer is simplified vision of a cmplex phenomenon. While perhaps development without diversification is not conceivable, there are other aspects of development which should not be overlooked. It is in those aspects that OPEC has had its greatest achievements. During a period of 15 years (1960-1975) member countries have increased their level of GNP per capita significantly and accumulated a large surplus capital which resulted in international financial power and reduced dependency. The long run impact of higher GNP on other aspects of development such as education, health and improved infrastructure also must not be overlooked.

There are, of course, OPEC's achievements at the international level to be considered. At the world level it has managed to reduce price fluctuation of crude oil. It enabled the producing countries to raise the price of thier commodity despite strong opposition from the companies and the core. In contrast to foreign aid, OPEC members were

able to increase their income while maintaining and expanding their national sovereignty. This increased monetary power, when translated into financial strength, enables them to have some voice in the management of international monetary affairs. They not only extend financial assistance to those LDCs that may suffer from higher petroleum prices, (Edelman and Chenery, 1977), but also try to modify the management of international monetary affairs for further liberalization of credits to LDCs (Bergsten, 1977).

Another consideration is the desirability of an expanding manufacturing sector. Is increased manufacturing a desirable goal for the OPEC countries? Should they utilize their surplus capital to expand industry or use it as leverage in international financial affairs? Today some of the OPEC countries claim a noticeable voice in the management of financial trade. The main question then is whether, for a special group of countries like OPEC members, development is defined as a strong manufacturing sector or a large stock of financial credits. Any response to these questions requires case studies of the developmental policies implemented by the OPEC countries. But, as long as the very act of participation in the world market is viewed as the basis of external dependency, questions such as these cannot be considered in the dependency model. In other words, the assumption of the world market as a dependency generating agent rules out these considerations from the list of developmental strategies.

Finally, the results of this study do support some of the underlying assumptions of two developmental models: the neoclassical economics and the dependency model. The findings support neoclassical

economists' policy suggestions such as resource transfer and mutual gain through multi-lateral cooperation, (Bhagwati, 1977; Bergsten, 1977). The results showed that export economies, under certain conditions, can generate capital gain, improve the general level of GNP and perhaps supply the resource exporting countries with means of self-reliance. The data suggested that commodity export is not necessarily detrimental to economic growth.

The fact that OPEC, a union of commodity exporters, supports some of the arguments of laissez-faire economists, suggests a need for re-evaluation of free trade principles. The very idea of free trade rejects the notion of controlled production and export. Thus, it is not surprising that when OPEC was first organized, some of the economists -- Milton Freedman and Morris Addleman -- were quick to predict its immediate collapse (Bhagwati, 1977). OPEC, however, survived and its success, despite attempts from DCs to mobilize poor nations against it, was cheered by other Third World countries. This, and similar movements in Third World countries against their continuous exploitation, calls on economists to reconsider some of their assumptions about free trade. Recent studies of social change have revealed that neoclassical economists' developmental policies, like foreign capital investment and aid agreements, have resulted in short run booms and long run economic dependency for LDCs, (c.f., Bronschier, et al., 1978). Therefore, it may be suggested that neoclassical economists need to (1) re-evaluate their theoretical perception of underdevelopment not as a prior stage to development, but, rather, as its by-product; and (2) evaluate the long run effects of their developmental suggestions on the structure of the LDCs.

To these ends, they may turn to the theoretical explanations and empirical findings of the dependency model.

As for the dependency model, the results show that participation in a commodity organization is not a determining factor in diversification of Third World countries. In other words, as far as diversification is concerned EA participation may not alter the effects of primary specialization. In case of OPEC countries, increased domestic capital was not conducive to increased manufacturing output. In fact, OPEC participation seems to have negative impact on manufacturing sector of economy (i.e., negative effects of OPEC on diversification, metric and regression coefficients, see Tables 1 and 3).

The final results for the dependency model lead one to believe that perhaps this model needs to reorient itself to the idea of class antagonism at the international level. This model, by emphasizing the integrating nature of the world market, underestimates the dependency resisting forces of the periphery. As long as participation in the world market is seen as automatically leading to foreign dependency, the idea of class conflict is overlooked. In other words, the world-system model views participation in the world market as inevitably leading to external dependency. Such a deterministic approach fails to appreciate the nature of periphery's resistance to the exploitative tendencies of the world economy.

The world-system/dependency model, by conceptualizing the three structural positions of the nation-states, namely, core, periphery and semi-periphery, sets the foundation for the analysis of inter- as well as intra-states class conflict. However, after establishing

this basic framework, it fails to recognize an on-going inter-state conflict between the core and the periphery. It seems that the concept of dependency as a comprehensive, inevitable force, permeating all aspects of periphery's life by the very act of their market participation is the major obstacle to a clear vision of class conflict at the world level.

This conflict displays itself in various forms ranging from political support and solidarity agreements to violent resistance, e.g., anti-imperalist revolutions. Unionization of exporting activities, frequently sought by both the core and the periphery, is another form of class conflict at the world level. Organizations of export alliance and similar attempts (the Non-Allied Movement) challenge the notion of dependency as a ubiquitous and unyielding force. At this point the world-system model needs to consider the idea of class antagonism and to formulate an analysis of dependency-resistance movements in the periphery.

This paper is a comparative study of the two major theories of development; namely, neoclassical economics and the dependency model, and a critique of some of their propositions. The test of the hypotheses simultaneously supported some of the main premises of the two models. This suggests that the nature of relationships in the world economy is more complex than either model tries to depict. The structural problems of economic dependency and technological backwardness call on the economists to be cognizant of the long run impacts of their policy suggestions. The necessity of production and participation in the world market suggests that perhaps the dependency theorists need to get involved in policy evaluations and suggestions. It is in this task that the dependency model

can enrich itself from the experience of the neoclassical economists, for they have been behind major developmental policies implemented in LDCs.

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APPENDIXES

DYNAMIC MODEL OF OPEC PARTICIPATION

Appendix One

DYNAMIC MODEL OF OPEC PARTICIPATION

Dynamic models of social change analyze differential equations of the following type:

$$\frac{dPGNP(T)}{dT} = B_1 PGNP_{(T)} + B_2 DEP_{(T)} + B_3 DIV_{(T)} + B_4 CF_{(T)} + B_5 OPEC_{(T)} \qquad (1)$$

This type of mathematical equation yields information about:

1 - speed of change from the initial level of Y
2 - exogenous factors affecting the potential level of Y

One way to initiate the discussion of dynamic models is to differentiate among the potential level of Y, the lag coefficient (B_y) and the dynamic coefficient (b_y). The potential level of Y is the level toward which Y is growing given a country's or group of countries' current characteristics. It is the level of per capita GNP that a country can achieve in the future given its present, e.g. 1975, characteristics.

The lag coefficient shows the impact of Y_{t-1} on Y_t. It measures the effect of past values of the dependent variable on its future levels. The lag of the dependent variable is one of the factors separating static regression from the dynamic techniques of temporal analysis. The dynamic coefficient is an indicator of the effect of previous values of the dependent variable on its rate of change. It is calculated as $L_n BY/t$, measuring the speed of change from the initial level of Y. The dependent variable in the lag model is the level of Y, whereas in the dynamic model it is the rate of change in Y. Therefore, in a simple differential equation model like #1 , the rate of change in per capita GNP,

is a linear function of level of GNP plus independent variables. Here, the dependent variable is the rate of change of GNP and, as Coleman points out, the rate of change "depends on the value of the variable itself undergoing change" (1968).

Dynamic coefficients are also indicators of speed of change in Y. With many sociological variables, the dynamic coefficient (bY) is less than 0 and the current level of Y is less than the potential level of Y. These two conditions imply that Y is increasing at a decreasing rate. For example, individual income increases at a decreasing rate over the course of life. My results indicate this is true of all the dependent variables under consideration in my analysis. When these two conditions hold, the larger the lag coefficient, the smaller the absolute value of the dynamic coefficient. A large lag coefficient, and a resulting small dynamic coefficient imply that the potential level of Y is very dependent on the current level of Y, and less dependent on other factors. A relatively small lag coefficient, and a resulting large dynamic coefficient imply that the potential level of Y is less dependent on current level of Y, and more dependent on other factors. The significance test for the lag coefficient also applies to the resulting dynamic coefficient implying that the potential level of Y is significantly dependent on past values of Y and is not totally determined by exogenous factors.

In sociological studies, dynamic models are used as a summary device for explaining the potential level of Y. These models yield three types of information: (1) the potential level of Y; (2) the rate of change of Y; and (3) the effect of exogenous factors on the rate of

change. For our purposes, the result of the dynamic analysis shows:

1 - the effect of past values of per capita GNP on its rate of change, i.e., the dependence of future values of GNP on its past values
2 - the effect of independent variables on the rate of change of per capita GNP.

Dynamic equations add extra information about the rate and nature of change that lagged variables fail to supply. For instance, lag values show the effect of per capita GNP 5 years ago, (e.g., 1965) on GNP 5 years later, (e.g., 1970). The dynamic coefficient, however, measures the effect of past values of per capita GNP on its rate of change. The potential levels of the dependent variables are not computed because they have little bearing on the test of hypotheses (the potential level of Y which a country could achieve given its current characteristics).

Tabel 1 presents dynamic coefficients for all dependent variables. The evaluation of the dynamic coefficients is based on their significance test. For instance, the dynamic coefficient of economic growth is -.451, which is significant beyond .001, indicating that the rate of change in per capita GNP in LDCs is significantly dependent on its past values and is not totally determined by exogenous factors. Thus, any significant dynamic coefficient, such as capital formation (-.198), economic diversification (-.109), export (-.081) and financial dependency (-.404), denotes that the potential levels of the variables in LDCs is significantly dependent on its present levels and is not totally determined by exogenous factors like OPEC participation.

Potential coefficients, b_X, (measured by $B_X/1 - B_Y$, or lag coefficient of X/1 - lag coefficient of Y) represent factors affecting the potential level of Y. These coefficients are not standardized and

cannot be compared. However, their signs are important. Since they are calculated from the lag coefficients of the independent variables, their significance test is the same as the lag variables. In fact, they are analogous to unstandardized regression coefficients, representing a measure of dependence of potential level of Y on X.

Table 1 and Figure 1 present the potential coefficients for all the hypotheses. OPEC has an expected positive effect on the potential level of capital formation (b = .210) which is significant beyond .001. This indicates that participation in an EA (OPEC) can help member countries increase their domestic capital in the future. This part of the dynamic analysis is consistent with the results of the cross-sectional and time-series analyses and supports Hypothesis 1.

The second Hypothesis proposed that the increased capital will be channelled to industry promoting economic diversification of the LDCs. The dynamic analysis reveals that OPEC (-.047) and domestic capital (-.074) have inverse but insignificant effects on the potential level of diversification in LDCs. The signs of these coefficients are contrary to the proposed reltionships; thus, they fail to support Hypothesis 2. It seems that EA participation and surplus capital are not the determining factors in future diversification of LDCs.

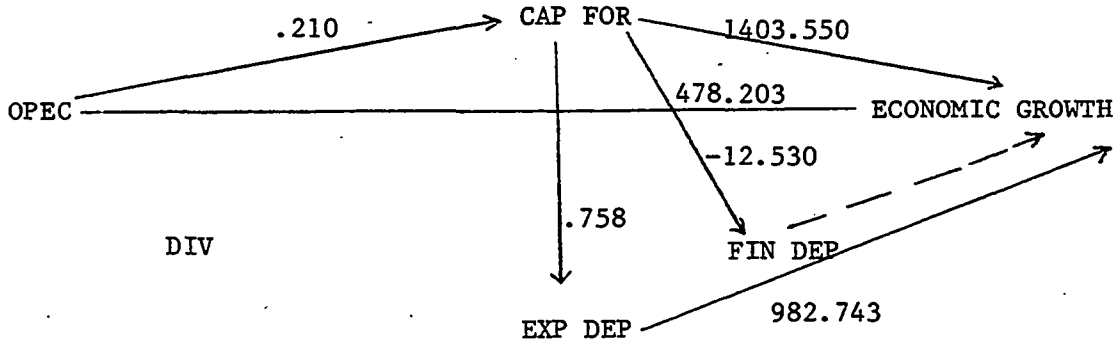
Taking financial dependency as the dependent variable, OPEC membership has the expected negative effect on the potential level of financial dependency (-.259), but this effect is not significant. The same holds true for the effect of diversification (-13.390). However, the effect of capital formation on the potential level of financial dependency, b = 12.530, is both significant and negative. It was expected

Table 1: Estimated Parameters for Differential Equation Model

Independent Variables		P
Capital Formation		
Dynamic Coefficient	-.198	.0---
OPEC	.210	.0---
Economic Diversification		
Dynamic Coefficient	-.109	.0---
OPEC	-.047	.06
CAP FOR	-.074	.2
Financial Dependency		
Dynamic Coefficient	-.404	.04
OPEC	-.259	.9
CAP FOR	-12.530	.04
DIV	-13.390	.2
Export Dependency		
Dynamic Coefficient	-.081	.0---
OPEC	.152	.1
CAP FOR	.758	.0---
DIV	-.135	.8
Economic Growth		
Dynamic Coefficient	-.541	.0---
OPEC	478.203	.006
CAP FOR	1403.550	.0---
DIV	62.836	.9
EXP DEP	982.743	.002
FIN DEP	-4.182	.5

Where: CAP FOR = Capital Formation
DIV = Diversification
FIN DEP = Financial Dependency
EXP DEP = Export Dependency

Figure 1: Observed Parameters of Differential Equation Model



* P ≤ .05

Where: CAP FOR = Capital Formation
DIV = Diversification
FIN DEP = Financial Dependency
EXP DEP = Export Dependency

that increased domestic capital would promote diversification which, in turn, would help LDCs control their financial dependency. The results of the dynamic technique, like cross-sectional and pooled time-series analyses, show that domestic capital directly, not through diversification, reduces the potential level of financial dependency. Then, the results of the dynamic analysis, through a different intervening process, support part of Hypothesis 3, relevant to financial dependency.

Treating export dependency as the dependent variable, diversification has the expected negative effect on the potential level of export dependency, b = -.135, which is not significant. The effects of OPEC (.152, not significant) and capital formation (.758, significant) on the potential level of export dependency are contrary to our expectations. It was hypothesized that OPEC through the potential levels of capital formation and diversification would reduce the potential level of export dependency, but the results in Table 5, suggest that OPEC through the potential level of capital formation will increase the potential level of export dependency in LDCs in future.

The results for economic growth indicate that OPEC participation (478.203), capital formation (1403.550) and diversification (62.836) have the anticipated positive effects on the potential level of per capita GNP, but the effect of diversification is not significant. Financial dependency has the predicted negative effect (-4 .182) which is not significant. Export dependency has an unexpected positive effect (982. 743) which is significant beyond .005. The effect of OPEC, then, on the potential level of GNP occurs directly (.210) and through intervening variables indirectly. The indirect effect is channelled through capital

formation, i.e., OPEC increases domestic capital (478.203) which, in turn, effects the potential level of GNP directly (1403.550), and through export dependency (982.743), indirectly (see Figure 1).

The results of the dynamic technique are, generally, consistent with those of the cross-sectional and time-series analyses. OPEC participation will increase the potential level of domestic capital supporting Hypothesis 1. The positive effect of OPEC on the potential level of domestic capital suggests that those DLCs specializing in extractive industries can attain higher levels of domestic capital by participating in an EA.

The analyses of economic diversification and export dependency have consistently yielded a complementory result in this research, which suggests an export economy, even though controlled and regulated by a multi-national organization, is not conducive to economic diversification of LDCs. Although, OPEC has a positive and significant effect on the potential level of capital formation, this increased capital does not seem to lead to diversification of LDCs in the future. Rather, the increased capital will be channelled to the export sector (the positive effect of capital formation on the export dependency) leading to a higher level of export dependency in future. This is contrary to an argument by the neoclassical economists that a higher return on raw materials can promote diversification of LDCs. Instead, as the dependency model suggests, this surplus capital is re-invested in the primary sector generating a higher potential level of export dependency. Although EA participation may enable LDCs to retain a higher share of their surplus capital, this financial capacity is not a determining factor in their future diversi-

fication. Then one is led to conclude that perhaps the historical studies of underdevelopment have overestimated the importance of surplus capital for economic diversification of Third World countries.

The negative effect of OPEC, through domestic capital, on the potential level of financial dependency, suggests that resource exporting countries organizing an EA may be able to reduce their reliance on foreign capital in future. The positive effect of OPEC, directly and through intervening variables, indirectly, on the potential level of per capita GNP, indicates that integrated export policies have a positive and significant effect on the future growth of the participants, despite their specialization in extractive industries.

APPENDIX TWO

This section contains four tables, presenting the results of the multiple regression analysis for 1955-1970 data. There are also four path diagrams showing the effect of the exogenous variable on the dependent variables in the model, in the above periods. As the tables and path diagrams show, the relationships between variables, over a 15 year period, undergo considerable change.

This study starts in 1955, before the establishment of OPEC, therefore, the results for 1955, shows the relationships between other variables excluding OPEC. As Table 1 shows, capital formation has a negative and significant direct effect on financial dependency and a significant positive effect on export dependency. The only other significant coefficient in the table is the direct negative effect of diversification on financial dependency.

For 1960 period, OPEC shows its expected positive effect on capital formation, but it also has a positive direct effect on economic growth, and a positive direct effect on export dependency. All of these coefficients are significant. Capital formation has a negative significant effect on financial dependency, but its effects on other variables fail to be significant. Export dependency shows a positive and significant effect on GNP per capita.

In 1965, OPEC maintains its significant positive effect on capital formation (.440). It also has a negative significant effect on diversification (-.303). Capital formation and diversification, both have negative significant effects on financial dependency, but as far as export dependency is concerned, capital formation has a positive and di-

versification a negative direct effect on export dependency. These coefficients are both significant. Capital formation, also, has a positive direct effect on GNP per capita (.323) which is significant at .05.

For 1970 period, the direct positive effect of OPEC on capital formation fails to be significant (.209), but its direct negative effect on diversification (-.293) is significant. Taking export dependency as the dependent variable, diversification has the expected negative effect and capital formation has a positive direct effect on the export dependency. These effects are both significant. This time no variable shows a significant effect on financial dependency. Looking at the GNP per capital OPEC (.287), diversification (.389) and export dependency (.615) have respectively direct positive effect on 1970 GNP. These coefficients are all significant. The direct effect of capital formation and financial dependency on GNP fail to be significant.

Table 1: Results of Cross-Sectional Analysis for All Hypotheses, 1955

Independent Variables	b	Stand.Error	B	P
		Capital Formation		
OPEC				
Multiple R				
		Economic Diversification		
OPEC				
CAP FOR	-.067	.888	-.103	.4
Multiple R - .011				
		Export Dependency		
OPEC				
CAP FOR	.747	.272	.352	.008
DIV	-.449	.418	-.138	.1
Multiple R - .153				
		Financial Dependency		
OPEC				
CAP FOR	-28.601	7.609	-.456	.000
DIV	-23.049	11.706	-.239	.05
Multiple R = .243				
		Economic Growth		
OPEC				
CAP FOR	916.994	4223.940	.037	.8
DIV	8280.045	5497.520	.217	.2
EXP DEP	-468.572	1785.762	-.040	.7
FIN DEP	-13.482	63.786	-.034	.8
Multiple R = .056				

Where: CAP FOR = Capital Formation
DIV = Diversification
EXP DEP = Export Dependency
FIN DEP = Financial Dependency

Table 2: Results of Cross-Sectional Analysis for All Hypotheses, 1960

Independent Variables	b	Stand.Error	B	P
		Capital Formation		
OPEC	.160	.055	.364	.005
Multiple R = .133				
		Economic Diversification		
OPEC	-.021	.033	-.089	.5
CAP FOR	.041	.075	.078	.5
Multiple R = .009				
		Export Dependency		
OPEC	.207	.092	.291	.02
CAP FOR	.392	.209	.243	.06
DIV	-.458	.374	-.148	.2
Multiple R = .219				
		Financial Dependency		
OPEC	-.108	1.516	-.010	.9
CAP FOR	-.432	3.447	-.337	.01
DIV	.333	6.158	.007	.9
Multiple R = .116				
		Economic Growth		
OPEC	832.012	322.270	.317	.01
CAP FOR	857.736	773.757	.143	.2
DIV	1996.597	1266.227	.175	.1
EXP DEP	1253.124	467.125	.339	.009
FIN DEP	7.136	28.341	.030	.8
Multiple R = .389				

Where: CAP FOR = Capital Formation
DIV = Diversification
EXP DEP = Export Dependency
FIN DEP = Financail Dependency

Table 3: Results of Cross-Sectional Analysis for All Hypotheses, 1965

Independent Variables	b	Stand.Error	B	P
		Capital Formation		
OPEC	.135	.037	.440	.000
Multiple R = .193				
		Economic Diversification		
OPEC	-.058	.027	-.303	.03
CAP FOR	.008	.089	.013	.9
Multiple R = .088				
		Export Dependency		
OPEC	.007	.071	.011	.9
CAP FOR	1.141	.222	.577	.000
DIV	-.858	.336	-.270	.01
Multiple R = .450				
		Financial Dependency		
OPEC	-.239	5.153	-.007	.9
CAP FOR	-48.412	16.112	-.400	.004
DIV	-61.065	24.326	-.314	.01
Multiple R = .229				
		Economic Growth		
OPEC	454.538	247.086	.236	.07
CAP FOR	2019.352	1049.574	.323	.05
DIV	1899.546	1272.736	.189	.1
EXP DEP	757.478	487.839	.239	.1
FIN DEP	3.446	6.729	.067	.6
Multiple R = .362				

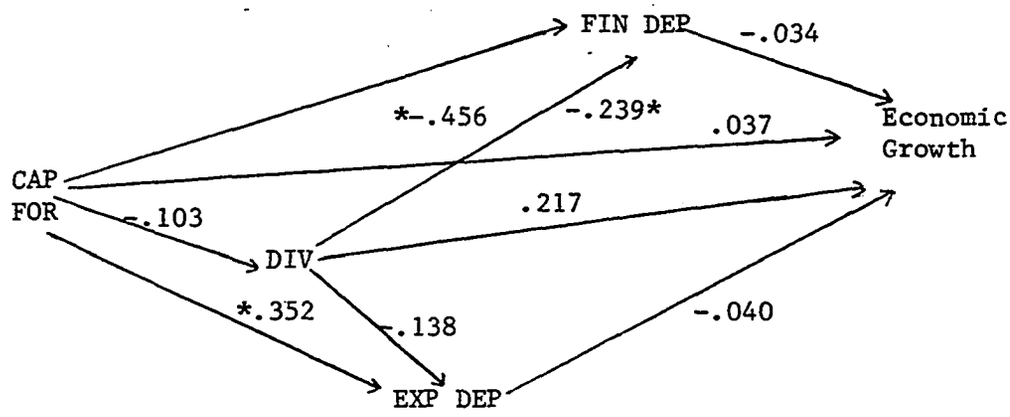
Where: CAP FOR = Capital Formation
DIV = Diversification
EXP DEP = Export Dependency
FIN DEP = Financial Dependency

Table 4: Results of Cross-Sectional Analysis for All Hypotheses, 1970

Independent Variable	b	Stand.Error	B	P
		Capital Formation		
OPEC	.084	.053	.209	.1
Multiple R = .044				
		Economic Diversification		
OPEC	-.044	.019	-.293	.02
CAP FOR	-.028	.048	-.076	.5
Multiple R = .101				
		Export Dependency		
OPEC	.010	.056	.019	.8
CAP FOR	.437	.132	.343	.001
DIV	-1.799	.369	-.521	.000
		Financial Dependency		
OPEC	-1.681	3.115	-.076	.5
CAP FOR	-11.704	7.393	-.214	.1
DIV	-18.747	20.635	-.126	.3
Multiple R = .061				
		Economic Growth		
OPEC	414.144	170.569	.287	.01
CAP FOR	46.580	463.722	.013	.9
DIV	3737.814	1352.670	.386	.007
EXP DEP	1724.747	430.385	.615	.000
FIN DEP	.932	7.690	.014	.9
Multiple R = .367				

Where: CAP FOR = Capital Formation
DIV = Diversification
EXP DEP = Export Dependency
FIN DEP = Financial Dependency

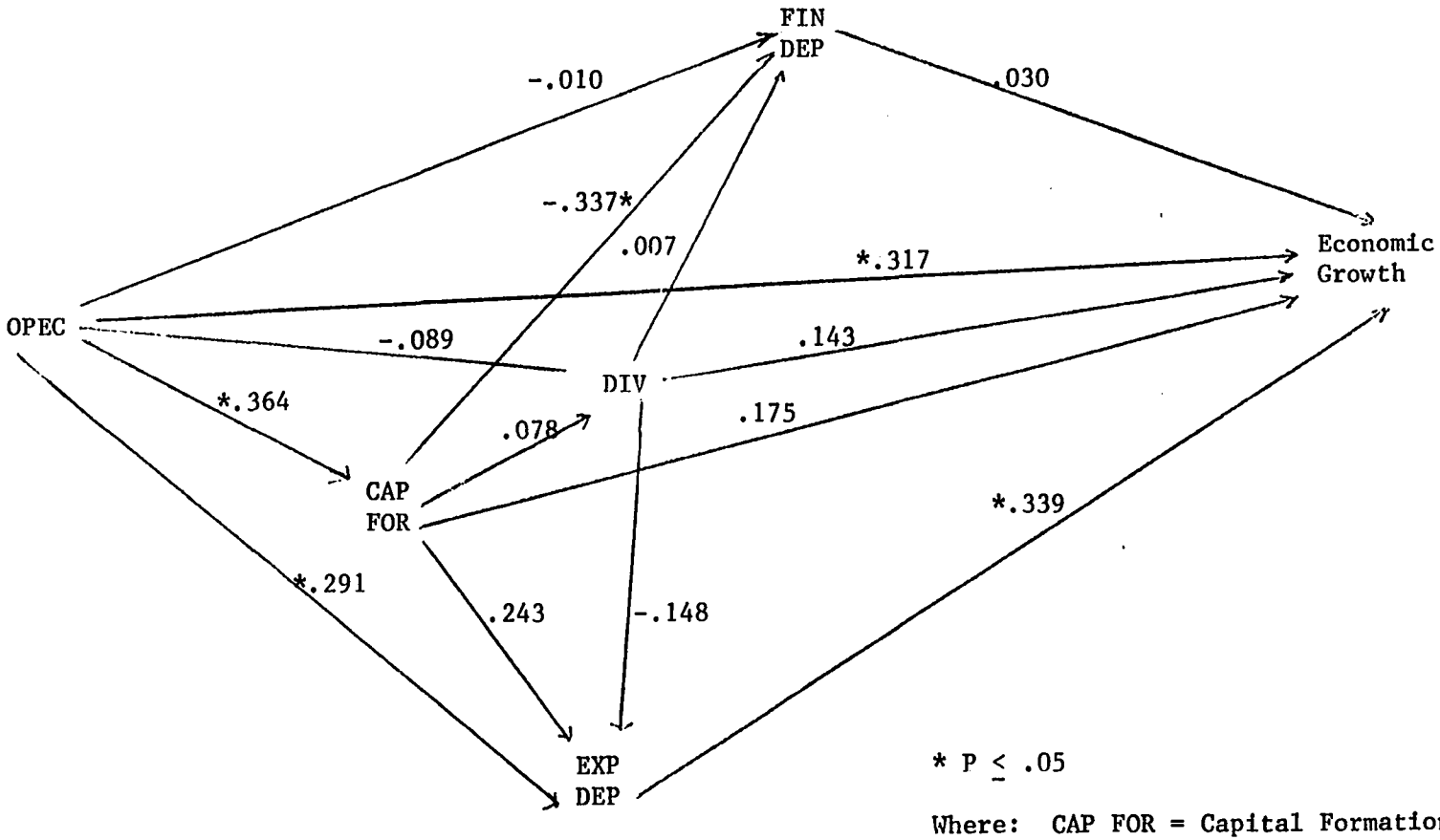
Figure 1: Path Design, Effects of Exogenous Variables on Economic Growth, 1955



* $P \leq .05$

Where: CAP FOR = Capital Formation
DIV = Diversification
FIN DEP = Financial Dependency
EXP DEP = Export Dependency

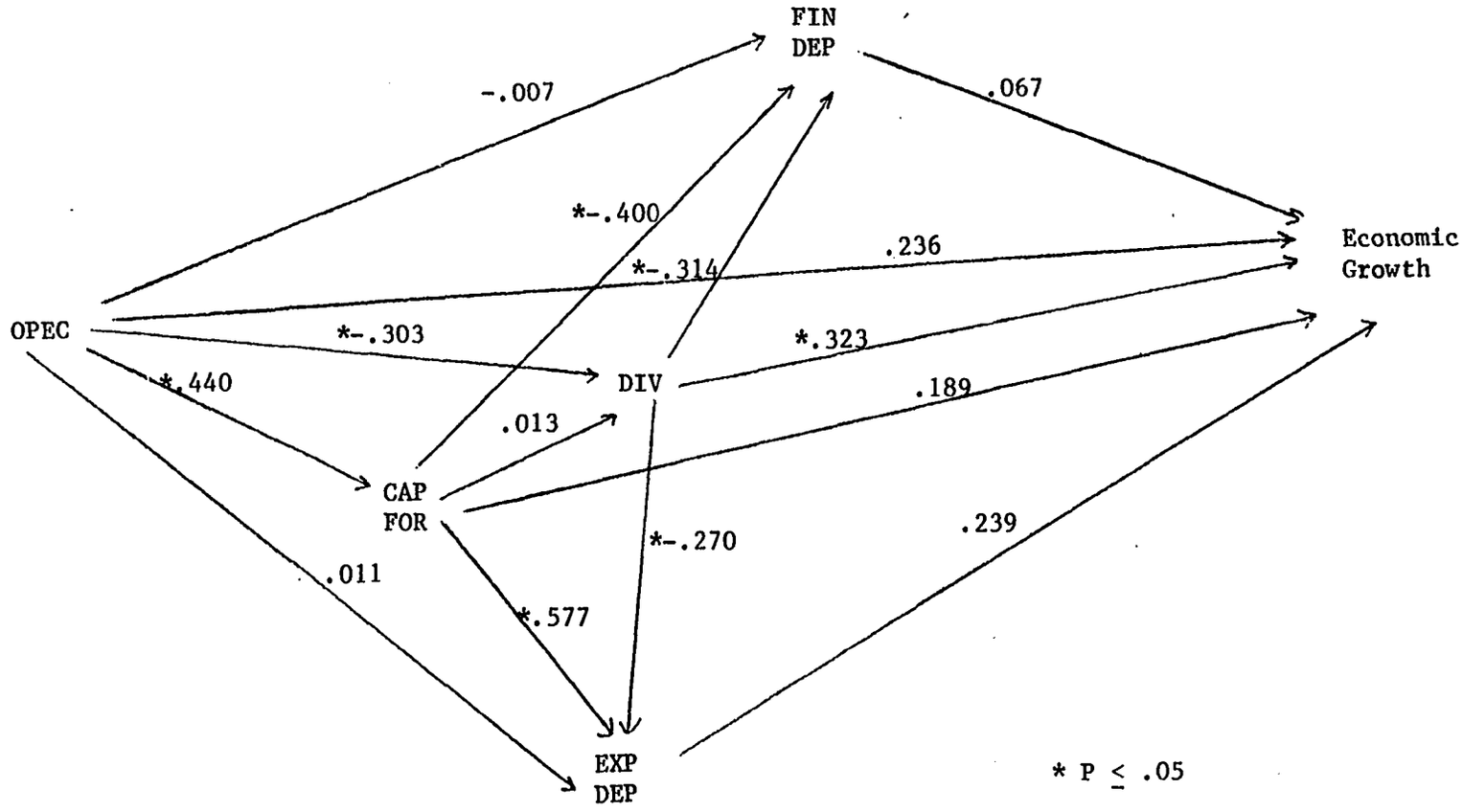
Figure 2: Path Design, Effects of OPEC on Endogenous Variables, 1960



* P ≤ .05

Where: CAP FOR = Capital Formation
DIV = Diversification
FIN DEP = Financial Dependency
EXP DEP = Export Dependency

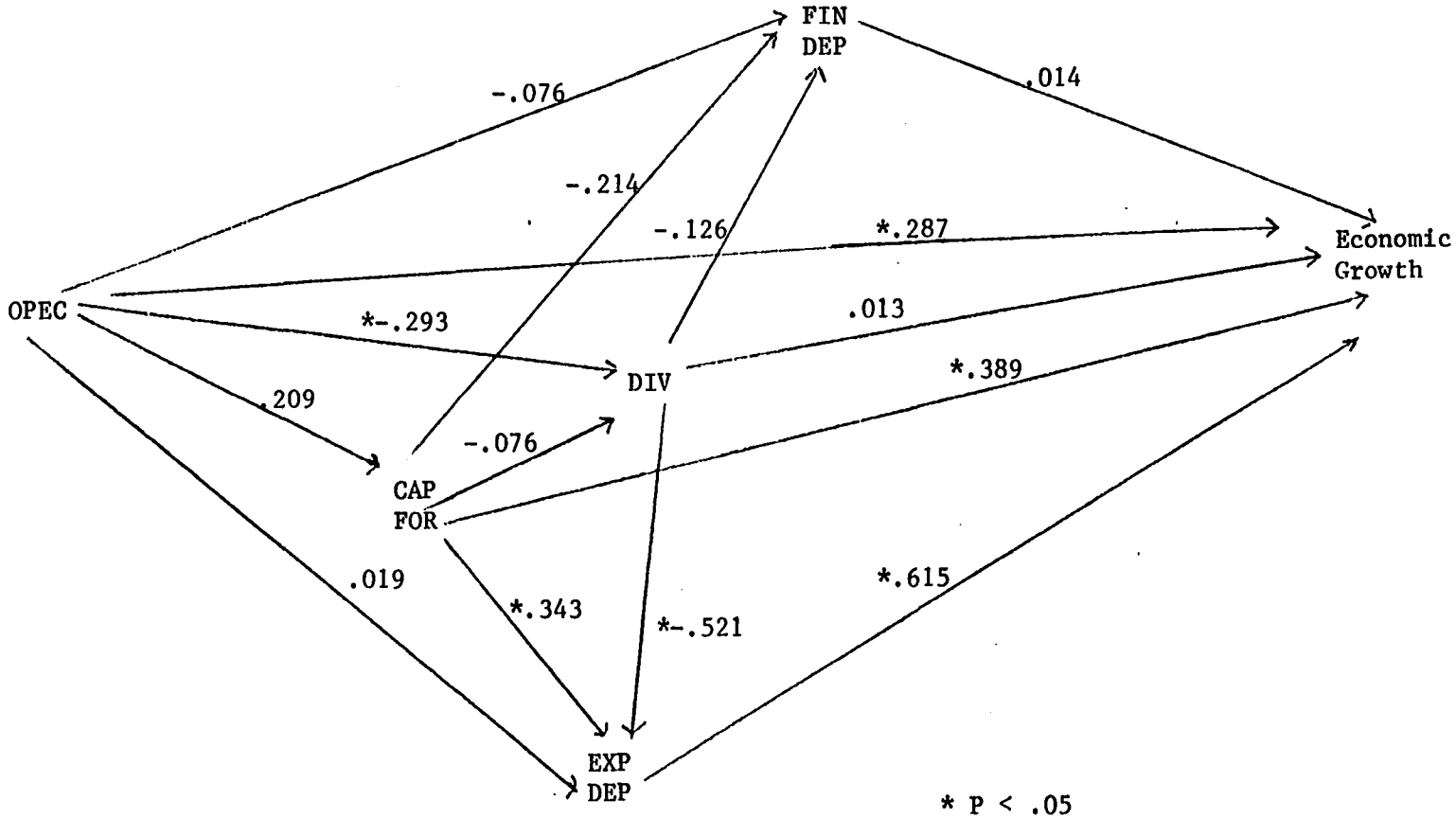
Figure 3: Path Design, Effects of OPEC on Endogenous Variables, 1965



* P ≤ .05

CAP FOR = Capital Formation
DIV = Diversification
FIN DEP = Financial Dependency
EXP DEP = Export Dependency

Figure 4: Path Design, Effects of OPEC on Endogenous Variables, 1970



* P ≤ .05

Where: CAP FOR = Capital Formation
DIV = Diversification
FIN DEP = Financial Dependency
EXP DEP = Export Dependency